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THE CHILD'S GUIDE TO KNOWLEDGE.

QUESTION. *What is the WORLD ?*

ANSWER. The earth we live in.

Q. *Who made it ?*

A. The Great and good God.

Q. *Are there not many things in it you would like to know about ?*

A. Yes, very much.

Q. *Pray, then, what is BREAD made of ?*

A. Flour.

Q. *What is FLOUR ?*

A. Wheat ground into powder by the miller.

Q. *What injury is WHEAT liable to ?*

A. To three kinds of diseases, called blight, mildew, and smut.

Q. *What is BLIGHT ?*

A. When the leaves of the plants and stalks are shrunk up and withered.

Q. *What is MILDEW ?*

A. When the straw and ear are affected.

Q. *What is SMUT ?*

A. When the ears, instead of being filled with grain, look black, and are full of dark brown powder.

Q. *What is BRAN ?*

A. The husk of wheat. Brown bread is made by leaving bran amongst the flour.

Q. *What is STARCH ?*

A. Wheat steeped in water, and exposed for some days to the heat of the sun.

Q. *What does this produce ?*

A. A floury slimy sediment at the bottom of the water.

Q. *What do they do with this ?*

A. Clean and dry it well in an oven, or by the heat of the sun.

Q. *What is its use ?*

A. To stiffen linen and muslin.

Q. *What* VEGETABLE *do they use instead of* WHEAT, *when it is scarce?*

A. The potato.

Q. *Is not* HAIR-POWDER *made from* STARCH? ✓

A. Yes, it is only starch ground to a fine powder and scented.

Q. *What is* SEMOLINA?

A. A light and wholesome food for invalids, formed from wheat flour into small grains; it also makes excellent puddings.

Q. *What is* MACARONI?

A. Fine wheat flour, mixed with white of eggs; it comes from Italy, Sicily, and Germany. ✕

Q. *What does its name signify?*

A. Cut paste; it is eaten on the Continent with milk, and in soups and puddings.

Q. *How do we serve it up?*

A. In a dish with grated cheese, milk, and other things.

Q. *What is* VERMICELLI?

A. A mixture of flour and cheese, the yolk of eggs, sugar, and saffron. ✓

Q. *How is it formed into long slender threads like worms?*

A. By being forced through a number of little holes in the end of a pipe made for the purpose.

Q. *Where is it brought from?*

A. Italy, and is used in soups and other things.

Q. *What are OATS?*

A. The seeds or grains of an annual plant well known in Europe.

Q. *What do you mean by annual?*

A. Yearly, or being obliged to sow the grain, and plant it afresh every year.

Q. *What are the principal uses of OATS?*

A. To feed horses, and to make groats and oatmeal.

Q. *What are GROATS?*

A. Only oats freed from their husks, much used to make gruel.

Q. *What is OATMEAL?*

A. Ground oats, which is made into cakes and biscuits in the northern parts of England, and Scotland.

Q. *What is BARLEY?*

A. A well-known kind of corn, the most valuable of all grain after wheat.

Q. *Where does it grow wild?*

A. In Sicily, and other parts of the South of Europe.

Q. *Where is SICILY?*

A. A fine island in the Mediterranean Sea.

Q. *What is the principal use to which it is applied in this country?*

A. For the making of malt, which is barley steeped in water for three or four days.

Q. *Is this all the process?*

A. No, it is taken out, and lies till it begins to sprout.

Q. *What is then done with it?*

A. It is dried in a kiln, heated with coke, charcoal, or straw.

Q. *What is COKE?*

A. Sea coal, burnt into a kind of sinder, used where great heat is required.

Q. *What is CHARCOAL?*

A. Wood half burnt: it is heaped

up into piles or stacks, covered with turf, and as the air cannot get to it, it smothers.

Q. *Is not CHARCOAL useful in different manufactures?*

A. Yes, where a strong fire is wanted without smoke.

Q. *What is PEAT?*

A. A fuel obtained from bogs, used in countries where the supply of coal is limited.

Q. *How is it prepared for use?*

A. The moisture is pressed out; it is then dried in the air, when it becomes much harder than coal.

Q. *How many kinds of PEAT-BOGS are there?*

A. Two, the Red-bog, and the Black-bog.

Q. *What country is remarkable for its BOGS?*

A. Ireland, where peat has long been the only fuel of the poorer classes.

Q. *What is the use of MALT?*

A. To make ale and beer; hot water is added to the malt; the liquor

thus produced, after it has remained some time, is drawn off and called wort.

Q. *What is next done?*

A. It is then boiled with some hops, which give it a bitter taste, and serve to keep it sweet and good ; afterwards it undergoes fermentation, and is put into a cask.

Q. *What do you mean by fermentation?*

A. It means a working which produces a peculiar sour, over-ripe flavour.

Q. *How is that flavour removed?*

A. It subsides of itself ; the cask is then stopped down, and the beer becomes clear and drinkable.

Q. *Is it not requisite for all BEER and WINE to ferment?*

A. Yes ; and yeast is used to assist it.

Q. *What is YEAST?*

A. The fermentation of malt.

Q. *Are there not several degrees of fermentation?*

A. Yes ; the first degree is vinous

or spirituous, the second acid or sour, and the third putrid.

Q. *What are HOPS?*

A. The dried flower buds of a most beautiful plant, which grows twining round long poles.

Q. *Where are the principal hop grounds?*

A. In Kent, and near Farnham in Surrey.

Q. *What is PORTER?*

A. A liquor made of malt and hops, fermented with yeast.

Q. *What is PEARL BARLEY?*

A. It is barley freed from its husks, and formed into round grains about the size of small shot, of pearly whiteness, which has given it the name of pearl barley.

Q. *What is SAGO?*

A. The inner pith of a species of palm-tree, growing in the Moluccas and Ceram.

Q. *Where are these islands situated?*

A. In Asia, between New Holland and China.

Q. *How is it prepared for use?*

A. The tree is sawn into pieces, the pith taken out, and ground to a fine powder.

Q. *What is then done with it?*

A. It is rubbed through a fine hair sieve, mixed with water, into a thick paste, and dried in a furnace. X

Q. *What is TAPIOCA?*

A. A fine flour prepared like sago, into small grains, from the root of a South American plant called cassava.

Q. *For what is it used?*

A. It affords a nourishing food, and is made into jelly, puddings, &c.

Q. *What is RICE?*

A. The seed of a grass-like plant, that grows in Asia and some parts of America. W. P. M.

Q. *What country produces two crops every year?*

A. China; they sow it in March and July.

Q. *What does this plant require?*

A. A great deal of water.

Q. *Is it not the principal food of the lower class of people in Asia?*

A. Yes. ✕

Q. *To whom were the Americans indebted for this grain?*

A. To a Mr. Dubois, treasurer of the East India Company, who gave a small bag of this grain to a merchant of Carolina. ✕

Q. *When was the EAST INDIA COMPANY established?*

A. In the reign of Queen Elizabeth; the right of trading to the East Indies was exclusively confined to those merchants. In consequence of the change made in the government of India, this Company was abolished in 1861. ✕

Q. *Is not the English nation celebrated for its extensive commerce?*

A. Yes; her ships are laden with the productions of every climate, and her traffic supplies everything that is convenient and ornamental.

Q. *When did England first begin to trade with foreign nations?*

A. During the Crusades some adventurous merchants imported many rich foreign goods, but very little com-

mercial progress was made before the time of Elizabeth.

Q. *What is meant by* EXPORTATION, *and* IMPORTATION ?

A. Exportation is sending abroad our own manufactures and productions ; importation is bringing in goods from other countries.

Q. *What are duties levied on imported and exported goods called ?*

A. Customs.

Q. *What is meant by* EXCISE ?

A. Taxes levied on goods manufactured and consumed in England.

Q. *Are we not at present chiefly supplied from America with* RICE ?

A. Yes ; and the Carolina rice is much the finest, the grains being double the size of that which comes from the East Indies.

Q. *What very strong spirit is obtained from* RICE ?

A. That called arrack is partly made from it, being also mixed with toddy, which is the juice of the cocoa-nut tree.

Q. *What is* MILLET ?

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A. A small seed brought into this country from the East Indies, chiefly used for puddings ; it is also an excellent seed for fattening poultry.

Q. *What is BUTTER ?*

A. It is made from cream by churning.

Q. *What is CREAM ?*

A. The richest and lightest part of milk ; it collects on the top, and is skimmed off and churned into butter.

Q. *From whence do we obtain our supply of SALT BUTTER ?*

A. Large quantities are imported from Holland, Belgium, and France.

Q. *What English counties are famous for BUTTER ?*

A. Buckinghamshire, Essex, Cambridgeshire, Dorset, and Devonshire.

Q. *What is BUTTER-MILK ?*

A. The thin whey which remains after the cream has been churned into butter.

Q. *How is the rich yellow colour of BUTTER sometimes produced ?*

A. By a colouring matter called annatto.

Q. *What is ANNATTO ?*

A. It is obtained from the pulp of the seed vessels of a shrub growing in South America.

Q. *What is CHEESE ?*

A. Milk or cream curdled, by being warmed and mixed with rennet. ✓

Q. *What is RENNET ?*

A. The stomach of a sucking calf, well cleaned and filled with salt; a certain quantity of this brine is poured into the warm milk, which it curdles.

Q. *How is the CHEESE made into the shape we see it in ?*

A. The curds are pressed as dry as possible, salted, put into shapes, and again pressed down tightly to form a cheese. ✓

Q. *Which is the richest ENGLISH CHEESE ?*

A. That called Stilton, which is made in Huntingdonshire, Leicestershire, Rutland, and Northamptonshire; it owes its excellence to the rich pastures in which the cows are fed.

Q. *Which is the most celebrated FOREIGN CHEESE ?*

A. That called Parmesan, which is made of a mixture of ewes' and goats milk, with that of the cow. ✓ P 12

Q. *From whence does it come?*

A. From the neighbourhood of Parma, and from various parts of Italy.

Q. *What is LARD?*

A. The fat of swine; it is melted and run into bladders that have been cleaned with great care. ✓ P 13

Q. *What is its great use?*

A. It is much employed in cooking, and is valuable to the doctor in making up his ointments, &c.

Q. *What is BRAWN?*

A. It is the flesh of the boar pickled in a peculiar manner.

Q. *What is SUET?*

A. The solid fat found chiefly about the kidneys of sheep and oxen, very useful in cooking. ✓ P 12

Q. *What are HAMS?*

A. The thighs of hogs salted and dried.

Q. *What are Westphalia HAMS?*

A. They are made from the wild

hog and boar, and such animals as are well fed, and roam about at pleasure.

Q. *Have they not a singular flavour?*

A. Yes, in consequence of their being smoked some months in chimneys where wood only is burnt. ✓ P.M.

Q. *Why are they called WESTPHALIA HAMS?*

A. Because Westphalia in Germany, is famous for them.

Q. *What other kinds of MEAT are eaten?*

A. Beef which is the flesh of the ox; mutton of the sheep; veal of the calf; lamb of the young sheep; and venison of the deer. ✓ P.M.

Q. *Where are DEER kept?*

A. In parks; they are called game on account of the sport they afford the sportsman.

Q. *What other animals and birds constitute GAME?*

A. The hare, pheasant, partridge, and wild rabbit: game may only be shot by those persons who are qualified by license. ✓ P.M.

Q. *What kinds of POULTRY are bred in this country?*

A. The common fowl, Cochín China, Bantam, Polish hen, Guinea fowl, duck, goose, and turkey.

Q. *From whence were the DOMESTIC FOWLS first introduced into Europe?*

A. From India, or Persia.

Q. *Where is the GUINEA-FOWL found wild?*

A. In Africa and the West Indies.

Q. *From whence were TURKEYS introduced into Europe?*

A. From North America, where they are found wild in large flocks.

Q. *What sort of bird is the PIGEON?*

A. A small gentle bird, remarkable for its swiftness of flight, and acuteness of sight and hearing.

Q. *Are not some of these birds much esteemed for the beauty of their plumage?*

A. Yes; the pheasant is said to have the richest and most variegated of all colours next to the peacock, and the feathers of the common cock are much valued.

Q. *For what are they used?*

A. They form the drooping plumes of the military hat. ✓ *PM*

Q. *Where is the PIGEON reckoned a holy bird?*

A. In Turkey, where flocks of pigeons are kept near the mosques.

Q. *What title is given to the EMPEROR OF TURKEY?*

A. Sultan, the word originated under Mahomet.

Q. *Who is the CHIEF MINISTER of the Sultan?*

A. The Grand Vizier, to whom is entrusted the care of the whole empire. *PM*

Q. *By whom is the title of PASHA borne?*

A. By Turkish viceroys and military commanders.

Q. *What is a DERVISH?*

A. A religious order among the Turks. There are two sorts—dancing dervishes, and howling dervishes.

Q. *What is TEA?*

A. The dried leaves of an evergreen

shrub which grows in China, Japan, and Siam. ✓

Q. *Where are these places?*

A. In Asia.

Q. *What is the difference between GREEN TEA and BLACK TEA?*

A. Some travellers tell us there is but one sort of plant, and that all the difference in tea arises from the leaves being young or fully grown, the nature of the soil, culture, and manner of drying. ✓

Q. *But do botanists agree in this opinion?*

A. No; they think there are at least two species, differing in their leaves, and more particularly in their flowers; that of the Bohea, or black tea flower, having six petals, and that of the green tea shrub having nine. ✓

Q. *Is it a plant of slow growth?*

A. Yes, it must have reached three years' growth before any leaves are fit to be plucked; it then bears plenty of very good ones; it does not exceed a man's height in seven years.

Q. Where do the finest TEA SHRUBS grow ?

A. In Japan, on one particular mountain, which is most carefully guarded.

Q. Are not the LEAVES from these trees gathered with equal care ?

A. Yes ; each leaf is plucked separately, and when the tea is fully prepared it is kept for the Emperor's use, and called Imperial tea.

Q. Are there not three SEASONS for gathering the leaves ?

A. Yes ; the first is in March, when the leaves are very small and not a week old ; this is very expensive and bought only by the grandees.

Q. When is the second gathering ?

A. In April ; at this time some leaves are fully grown, and others are still young, but they are all plucked and afterwards sorted.

Q. When is the third gathering ?

A. In June, when all the leaves have arrived at their full size ; this tea is coarser and lower in price.

Q. Which are the principal BLACK TEAS ?

A. Bohea, Congo, Souchong, and Pekoe.

Q. *What is BOHEA, or VOO-ZEE?*

A. The lowest quality of black tea, so called from the country in which it is produced; it is a mixture of small and large leaves.

Q. *How are they prepared for use?*

A. As the leaves are picked, they are put into flat baskets, placed in the sun or air from morning till night, after which they are thrown by small quantities into a cast-iron pan, which is made very hot.

Q. *What is then done?*

A. They are twice stirred with the hand, then taken out and rubbed between men's hands to roll them; after this they are roasted again in larger quantities, and sometimes are put into baskets over a charcoal fire.

Q. *When the TEA is sufficiently dried, what is done with it?*

A. It is spread on the table, and the leaves that are unrolled, yellow, broken, or too large, are picked out; the rest are packed for sale.

Q. *What is CONGO, or CONG-FOO ?*

A. A superior kind of Bohea, less dusty, with larger leaves ; they are gathered with peculiar care, and are said to be beaten with flat sticks or bamboos, after they have been withered by the sun or air, and have acquired toughness enough to keep them from breaking.

Q. *What does the word CONGO signify ?*

A. It means, in the Chinese, “ much care, or trouble.”

Q. *What is SOUCHONG ?*

A. It signifies in the Chinese, “ a small good thing ;” very little true Souchong is sold in Europe.

Q. *Why ?*

A. Because, among a whole plantation, there may only be found one single tree, the leaves of which are thought good enough to be called Souchong, and even of these, only the best and youngest are taken.

Q. *What is PEKOE ?*

A. A tea chiefly drunk in Sweden

and Denmark ; it is made from the tenderest leaves of trees three years old, gathered just after they have been in bloom, and has some of the small white flowers of the tree mixed with it.

Q. *What sort of a flower does the TEA SHRUB bear?*

A. It is like our wild white rose, and its root is like that of the pear tree.

Q. *Which are the principal GREEN TEAS?*

A. Singlo, Hyson, and Gunpowder.

Q. *How is it generally thought that GREEN TEA is prepared?*

A. The leaves are immediately roasted after being gathered, then thrown upon cast-iron plates and very much rubbed betwixt men's hands to roll them tightly.

Q. *Is this all the process?*

A. No, they are picked, cleansed from dust several times, roasted, and at last put hot into the chests in which they are packed.

Q. What does the name SINGLO signify?

A. The tea is so named from the place in which it is cultivated.

Q. What is HYSON TEA?

A. It has its name from that of an Indian merchant, who first sold this tea to the Europeans.

Q. What is GUNPOWDER TEA?

A. It is a superior kind of Hyson, gathered and dried with peculiar care; it is chosen in round grains, and looks like small shot, and has a beautiful bloom, which will not bear the breath.

Q. Who first introduced TEA into Europe?

A. A Dutch merchant, in 1610, who obtained it from the Chinese by exchanging dried sage with them.

Q. Were not they very fond of this herb?

A. Yes, they called it the wonderful European herb, attributing to it numerous virtues.

Q. But in which of our king's reigns did the East India Company give the first order for TEA?

A. In that of Charles II. in 1669 ; it consisted of only two canisters weighing 143lb., and was sold at fifty shillings a pound.

Q. *What is the quantity now sent every year from China?*

A. Upwards of a hundred and twenty millions of pounds weight, of which two-thirds come to this country.

Q. *How do the Japanese use their TEA?*

A. They grind it to powder as we do coffee.

Q. *Is not their manner of serving it curious?*

A. Yes ; they place before the company the tea equipage, and a box full of finely powdered tea.

Q. *What follows?*

A. The cups are then filled with warm water, and as much powder as will lie on the point of a knife is thrown into each cup, and stirred till the liquor begins to foam.

Q. *Is it then presented to the company?*

A. Yes, who sip it while warm : this custom prevails in many parts of China.

Q. *What is SUGAR ?*

A. The juice of a certain cane, first brought from China to the West Indies, where it now flourishes.

Q. *Where are the WEST INDIES ?*

A. A set of Islands between North and South America.

Q. *How were the SUGAR plantations formerly cultivated ?*

A. By negro slaves who were brought into the colonies from the coast of Africa.

Q. *Who were the first to engage in the slave trade ?*

A. The Portuguese ; the first monarch who authorized this detestable traffic was the Emperor Charles V., who consented to the introduction of negroes into the Spanish colonies of America.

Q. *Who was the commander of the first SLAVE-SHIPS from this country ?*

A. Sir John Hawkins, who fitted

out three vessels in the reign of Queen Elizabeth.

Q. When was the slave-trade abolished?

A. In 1807; but although the English could no longer buy or sell negroes, they continued to employ them as slaves on their plantations.

Q. How was the emancipation of the SLAVES accomplished?

A. Through the efforts of Mr. Wilberforce, who procured a bill by which the British Government paid the enormous sum of £20,000,000 for the liberation of 400,000 colonial slaves.

Q. What sort of a plant is the SUGAR-CANE?

A. It is like a tall stick, with a bunch of green leaves at the top, in the middle of which is a flower.

Q. How do they make SUGAR of this?

A. When the leaves begin to hang and look dead, they cut down the cane, and carry it to the mill to be crushed.

Q. What is the MILL?

A. It consists of three wooden rollers, covered with steel plates, which press and squeeze out the juice.

Q. *What is then done with it?*

A. It is boiled six times, and then, barrelled and sent to England.

Q. *Is it then fit for use?*

A. No; it must be boiled again with white of eggs, and other things to clear it, after which it is fit for use.

Q. *How do they make LUMP SUGAR?*

A. By pouring the juice, thus cleared, into shapes, and baking it till quite hard.

Q. *What is TREACLE or MOLASSES?*

A. The coarse remains of the sugar-syrup.

Q. *What is SUGAR-CANDY?*

A. It is sugar, boiled and cleared till it becomes thick; it is then poured over sticks or strings, placed across small tubs, and baked in a very hot stove.

Q. *What is BARLEY-SUGAR?*

A. It is also sugar boiled in water, to which lemon peel is added; and then it is rolled and twisted into sticks.

Q. Is not the juice of the SUGAR-PLANT very healthy?

A. Yes; every creature, whether man or animal, during the sugar harvest, appears to derive benefit from its use, and becomes fat and healthy.

Q. Have you told me all that is done with SUGAR?

A. No; rum is distilled from the molasses, or coarse part of sugar, which is skimmed off when boiling.

Q. Has not SUGAR been extracted from other things besides the sugar cane?

A. Yes; during the war, Napoleon had sugar made from beet-root, and juice extracted from the birch and elm has also been used when the proper sugar could not be obtained.

Q. What is BEET-ROOT?

A. A red, taper-rooted vegetable, much cultivated as food for cattle.

Q. What is COFFEE?

A. The berry of an ever-green shrub which grows in Arabia, and the East and West Indies.

Q. Where is ARABIA?

A. In Asia.

Q. *What sort of berry is COFFEE?*

A. When ripe it is red, and not very unlike a cherry; they are then gathered, and dried on mats placed in the sun.

Q. *What does this cause?*

A. The outer pulp, or skin, to be easily removed with the help of mills, afterwards the berries are again dried.

Q. *What else must be done to it?*

A. It must be roasted, ground, and boiled in water, it is then a delightful drink.

Q. *In which West India Island was COFFEE first planted?*

A. In Jamaica.

Q. *How much COFFEE does one tree produce?*

A. Not more than a pound, but a tree in great vigour will produce three or four pounds.

Q. *Who first introduced it into England?*

A. Mr. Daniel Edwards, a Turkey merchant, in 1652; he brought with

him a Greek servant of the name of Pasqua, who understood the method of roasting the berries, and making it into a drink.

Q. *What article is sometimes mixed with COFFEE ?*

A. Chicory, which is thought by some people to improve its flavour.

Q. *What is CHICORY ?*

A. A dark brown powder made from the root of the chicory or endive plant; it is found wild in many parts of England.

Q. *Where was the first COFFEE-HOUSE opened in London ?*

A. By this Pasqua, in George-yard, Lombard Street.

Q. *Has not LOMBARD STREET always been a noted place ?*

A. Yes ; it is named after a set of foreigners who settled in England in the reign of Edward the First, and whose business was to lend money "on interest."

Q. *What set of men now live there, and continue to do the same ?*

A. The bankers.

Q. *What class of people were first employed as BANKERS?*

A. The Goldsmiths, in the time of the Commonwealth.

Q. *Why?*

A. Because the rich merchants, who before the civil wars had always deposited their money in the Mint in the Tower, no longer thought it safe there, and employed the Goldsmiths to take care of it for them.

Q. *What is the meaning of the word COMMERCE?*

A. It is derived from two Latin words "con" together, and "merces" merchandize.

Q. *How was TRADE carried on in early times?*

A. By barter or exchange.

Q. *Who were the earliest MERCHANTS we read of?*

A. The Midianites going into Egypt, with rich freights of merchandize.

Q. *In what manner did they travel?*

A. In a large company, with camels as beasts of burden.

Q. *What is such a body of MERCHANTS now called?*

A. A caravan.

Q. *In what part of the world do these CARAVANS journey?*

A. In Arabia, Egypt, and other Eastern countries.

Q. *Why do they thus travel?*

A. In consequence of the danger often encountered from wild beasts, and bands of robbers, they unite for mutual protection.

Q. *Who takes charge of a CARAVAN?*

A. A chief, called a caravan bashé, is appointed, under whom are five leading officers.

Q. *What else is required by these MERCHANTS?*

A. A guide who is well acquainted with the features of the country; and also a firman, or passport.

Q. *Where was the first EUROPEAN BANK?*

A. At Venice, it was established during the reign of Richard Cœur de Lion.

Q. *When, and by whom, was the BANK OF ENGLAND established?*

A. In 1694, by a Scotchman named William Paterson. This institution is the great centre of the money business of the world.

Q. *Where is the BANK OF ENGLAND situated?*

A. In the city of London, near the Royal Exchange; its buildings cover a quadrangular space of about four acres.

Q. *Is not this establishment connected with GOVERNMENT?*

A. Yes; it has the management of the National Debt.

Q. *What is the NATIONAL DEBT?*

A. Money borrowed by the Government, for which a parliamentary security was given.

Q. *What great treasures are kept in the BANK?*

A. It contains some millions of money in gold and silver, and also a very large amount of bullion in vaults beneath, which are fire-proof.

Q. *What is BULLION ?*

A. Gold and silver in the mass. The gold is in bars, each weighing 16 lbs., and worth. £800.

Q. *Where is the GOLD portion of the British coinage prepared ?*

A. At the Royal Mint, in London ; it is slightly alloyed with silver and copper, so as to bring it to the exact state called sterling.

Q. *What is the meaning of the word STERLING ?*

A. It took its origin from the word Easterling, a people of Germany who were artists in fining gold and silver, and taught it to the English in the time of Richard. It is the name given to the current money of England.

Q. *How are the pieces of GOLD required for coinage prepared ?*

A. They are cut to the proper size, and then weighed in a machine which separates them into three groups, according as they are too heavy, too light, or the exact weight.

Q. *What is the final process ?*

A. They are stamped with a die of hardened steel, which thus leaves the impression.

Q. *When was MONEY first COINED in England?*

A. In the reign of Ethelbert, the first Christian King of Britain.

Q. *When was GOLD first COINED in England?*

A. In the time of the Plantagenets.

Q. *What great building was erected in London for the convenience of MERCHANTS?*

A. The Royal Exchange; it was built by Sir Thomas Gresham, in the reign of Queen Elizabeth.

Q. *Is that structure still standing?*

A. No; it was destroyed in the great fire of London, and another erected which was also burnt. The present building was opened by Queen Victoria in 1844.

Q. *What are SAVINGS BANKS?*

A. Banks established by Government in connection with the post-office, in which people may deposit small

sums of money and receive an interest thereon.

Q. *What is COCOA ?*

A. The kernel of a nut, which grows in South America.

Q. *What is CHOCOLATE ?*

A. A kind of cake or hard paste, which is made of the pulp of the cocoa or chocolate nut, mixed with sugar, clove, cinnamon, and other spices.

Q. *Where does the CHOCOLATE-TREE grow ?*

A. In America and the West Indies ; the flower is very beautiful ; its fruit is contained in a pod like a cucumber in shape ; each pod has twenty or thirty nuts in it, something like almonds.

Q. *How are those NUTS prepared for use ?*

A. They are cut into slices, laid on skins, and dried in the sun ; gently roasted, pounded in a mortar, and ground.

Q. *How is it formed into paste and cakes ?*

A. By the help of water, and whilst hot is put into tin moulds.

Q. *Who introduced CHOCOLATE into Europe?*

A. The Spaniards; the best is brought from the Caraccas; it should be used new, for it will not keep more than two years.

Q. *Where are the CARACCAS?*

A. Islands in the Caribbean Sea.

Q. *What are NUTMEGS?*

A. The kernels of a fruit, which grows on a large handsome tree, in many of the East India Islands.

Q. *Where are the EAST INDIES?*

A. In Asia.

Q. *Like what common English fruit is the NUTMEG?*

A. Like a walnut, being enclosed in the same sort of spongy coat, which is stripped off in the woods.

Q. *Does not this husk open at one end when the fruit is ripe?*

A. Yes, and when this coat is taken off, a very fine scarlet network is seen, which is called mace.

Q. *Does it keep this fine colour?*

A. No, after it is exposed to the sun and dried, it turns to a yellowish colour.

Q. *What is CINNAMON?*

A. The dried under-bark of the branches of a tree.

Q. *Where does this tree grow?*

A. Principally in the island of Ceylon, and forms one of the chief articles of its trade; but it also grows in Malabar, and other parts of the East Indies.

Q. *Where is the island of CEYLON?*

A. In Asia, at the entrance of the Gulf of Bengal.

Q. *How often do they strip the CINNAMON-TREES of their bark?*

A. Twice a year; they rip up the bark with a knife, then cut it into slices, which curl up in drying, and the smaller pieces are slipped into the larger ones.

Q. *Are there not persons who taste and chew it, to examine its quality?*

A. Yes, and it is very disagreeable work; few can do it for more than two

days together, as it deprives the tongue and lips of all moisture.

Q. *Is the BARK of the CINNAMON-TREE the only part that is valuable?*

A. No; the leaves, fruit, and root, all yield oil of considerable value.

Q. *What did they formerly make of the OIL from the FRUIT?*

A. Candles, for the sole use of the king; their smell was delightful.

Q. *What are CLOVES?*

A. The flower-buds of an East Indian tree, growing in the Molucca Islands.

Q. *Did not the DUTCH take great pains to cultivate it?*

A. Yes; and they carried on a very rich trade in this article with the rest of the world.

Q. *What is PEPPER?*

A. The dried berry of a creeping kind of shrub.

Q. *Where does it grow?*

A. In many parts of the East Indies.

Q. *How do these BERRIES grow?*

A. In clusters, from twenty to thirty

grains, somewhat like a bunch of currants.

Q. *What COLOUR are they?*

A. First green, but they change to a bright red when ripe, and after they are dried they become black.

Q. *Are BLACK and WHITE PEPPER the fruit of the same shrub?*

A. Yes, the berries are only dried for black pepper; but for white pepper the best and soundest of the berries are chosen, steeped in sea-water, and dried in the sun.

Q. *What does this cause?*

A. The skin to shrivel, which is then easily rubbed off by the hand, and leaves the berry white.

Q. *What is ALL-SPICE?*

A. The fruit of the beautiful pimento-tree.

Q. *Where does it grow?*

A. In Jamaica, and other parts of the West Indies.

Q. *Why is it called ALL-SPICE?*

A. Because it is thought to possess the flavour of all the other spices.

Q. *What is GINGER?*

A. The dried root of a reed-like plant.

Q. *Where does it grow?*

A. At Calicut and many other places in Asia and the West Indies.

Q. *What plant does it resemble?*

A. A rush, and the knotty root spreads itself over the surface of the ground.

Q. *How do the Indians use it?*

A. When fresh gathered it is soft, and in that state it is eaten by them as a salad.

Q. *Does it not likewise make a fine preserve?*

A. Yes, a most delicious one, and it is reckoned a great delicacy.

Q. *What is MUSTARD?*

A. It is made from the powdered seeds of a plant which grows wild in most parts of England, but it is cultivated with great success at Durham.

Q. *What is the BETEL LEAF, which we hear so much of the Indians chewing?*

A. It is the leaf of a creeping plant not unlike ivy ; they eat it in such quantities that their lips become quite red, and their teeth black.

Q. *Do they not consider this a beauty?*

A. Yes ; and they carry it about their persons in boxes, as we do snuff, and present it to each other. This is done by women as well as men.

Q. *Would they not consider it great rudeness if you refused it?*

A. Yes.

Q. *What are ANISE-SEEDS?*

A. The seeds of an annual plant which grows wild in Egypt, Syria, and other Eastern countries.

Q. *Did we not try to cultivate this plant in this country?*

A. Yes, but our climate was too cold, and we obtain them from Malta and Spain. They are very valuable in medicine.

Q. *What are CARDAMOMS?*

A. The seeds of an East Indian plant, which are brought into Europe

in their pods, and are very valuable in medicine.

Q. *Do not the Indians use them in great quantities in their food?*

A. Yes; and they also mix them with betel, and chew them.

Q. *What are CARAWAY SEEDS?*

A. A small, well-known seed, much used by pastry-cooks in cakes, and very useful in medicine.

Q. *Does not this plant grow wild in many parts of England?*

A. Yes, particularly about Bury St. Edmunds, in Suffolk; and it is much grown in Essex and Kent.

Q. *How do they thresh it?*

A. In the field on a cloth, in the same manner as rape-seed.

Q. *What are CORIANDER SEEDS?*

A. The seeds of a plant much grown in Essex and Kent, and used by distillers, druggists, and confectioners.

Q. *What is TURMERIC?*

A. The root of an East Indian plant like ginger, used in India and Europe in medicine, and in making curry

powder, and seasoning many other dishes.

Q. What is it chiefly valuable for now?

A. For giving a rich yellow dye to silks and linen, and improving the fine red dye of cochineal.

Q. What is ARROWROOT?

A. The root of a plant growing in the East and West Indies; it goes through a long preparation, and in the state we see it looks like a fine starch.

Q. From whence does it derive its name?

A. From the Indians using its juice for the cure of wounds made by poisoned arrows, and for the stings of venomous insects.

Q. What is MAIZE, or INDIAN CORN?

A. A grain much cultivated in America, for it yields two crops in the year, and is used for bread, puddings, cakes, &c.

Q. What is SAFFRON?

A. The orange-coloured petal, or centre part of a purple kind of crocus;

the flowers are gathered every morning just before they open.

Q. What part of them is used?

A. The upper part of the petal is picked out, and the rest of the flower thrown away ; they are dried in a kiln and made into cakes.

Q. Where does this plant abound?

A. In Cambridgeshire, where there is a town called Saffron-Walden, from the quantity which grows in the neighbourhood.

Q. What is the use of SAFFRON?

A. A yellow colour is prepared from the saffron plant, used in dyeing, and is valuable in medicine ; it dissolves in water.

Q. What medicine is prepared from the SAFFRON CROCUS ?

A. That called colchicum.

Q. What is the ORRIS-ROOT ?

A. A root well known from its delightful smell, which is like the violet ; it is used to scent hair powder and other articles.

Q. From whence is it brought ?

A. Chiefly from Leghorn, in Italy.

Q. *What is LIQUORICE ?*

A. The root and juice of a plant which grows in abundance in England.

Q. *In what part does it abound ?*

A. Whole fields of it are to be seen in the neighbourhood of Pontefract in Yorkshire.

Q. *What is SPANISH LIQUORICE ?*

A. Only the root and juice of the same plant growing in great quantities in Spain.

Q. *Where is SPAIN ?*

A. In Europe.

Q. *Is not a great quantity of LIQUORICE used in brewing London porter ?*

A. Yes.

Q. *What is AIR ?*

A. The invisible elastic fluid which we breathe and live in.

Q. *Of what is it composed ?*

A. Principally of two gases, oxygen and nitrogen.

Q. *How high does the ATMOSPHERE extend above the earth ?*

A. About forty-five miles.

Q. *How much lighter is AIR than WATER?*

A. Two hundred and eighty times.

Q. *What is an AIR-PUMP?*

A. A Pneumatic instrument by which the air may be removed or exhausted from any vessel.

Q. *What do you mean by PNEUMATICS?*

A. It is the science which treats of the nature and properties of air.

Q. *What is the AIR-GUN?*

A. An instrument by which a bullet is forced along a barrel to a great distance by means of condensed air.

Q. *What is meant by AEROSTATION?*

A. The art of sailing through the air in a balloon.

Q. *Of what are BALLOONS made?*

A. Of thin silk lined with a varnish made of a solution of gums and India-rubber to render them air tight.

Q. *With what are they filled in order to cause them to ascend?*

A. With a gas called hydrogen,

which is much lighter than the common air.

Q. *How do people travel in a* BALLOON?

A. In a little car which is fastened to the pear-shaped bag.

Q. *What is a* PARACHUTE?

A. A large umbrella-shaped machine, by means of which persons can descend from balloons.

Q. *What is* WIND?

A. Air put in motion by the variations of heat and cold.

Q. *What are* HURRICANES *or* WHIRLWINDS?

A. The wind blowing from all quarters at once. They are common in hot countries, where they sometimes blow down buildings, tear up trees by the roots, and destroy crops.

Q. *When a* WHIRLWIND *passes over the ocean what effect is caused?*

A. The waters are whirled high in the air like a column.

Q. *What is this column of* WATER *called?*

A. A waterspout.

Q. *What is the SIMOOM ?*

A. A hot wind which blows over the deserts of Egypt, Arabia, and other countries at certain seasons of the year.

Q. *What is the SIROCCO ?*

A. Another wind of the deserts : during the time it blows the air is thick and heavy, and its heat is like that of a furnace, causing pestilence and other diseases.

Q. *What are HYDRAULIC MACHINES ?*

A. Machines worked by water.

Q. *Name some of those MACHINES ?*

A. The hydraulic press, the syphon, the common pump, the steam-engine, water-wheels, and fountains.

Q. *Who invented WATER-PUMPS ?*

A. An Athenian named Ctesebes, about 150 B.C.

Q. *What causes the WATER to rise in a PUMP ?*

A. The action of the sucker removes the pressure of the air from the water.

Q. *How high will WATER rise in a pipe of a common PUMP ?*

A. Nearly 34 feet above the level of the water in the well.

Q. *What is a SYPHON ?*

A. A tube bent in a particular manner, used for drawing off liquors from casks, or water from reservoirs.

Q. *How does a SYPHON empty a vessel of its liquid ?*

A. One end of the tube is placed in the vessel and the air being exhausted from the tube, the air on the surface of the liquid presses it up the syphon, which conveys it into a receiver at the other end.

Q. *By what contrivance is the WATER projected from fountains ?*

A. From the hydraulic pressure at the fountain-head.

Q. *Are not the French celebrated for their FOUNTAINS ?*

A. Yes ; those at the Tuileries and Versailles are superb structures.

Q. *When was the PALACE OF THE TUILERIES built ?*

A. In 1564, by Catherine de Medicis.

Q. *What King of France first held his court at VERSAILLES ?*

A. Louis XIV., who converted it into one of the most splendid and extensive palaces in Europe.

Q. *Where are the most noted LONDON FOUNTAINS ?*

A. In Trafalgar Square ; they are supplied with water from an Artesian well.

Q. *What is an ARTESIAN WELL ?*

A. A boring made by machinery through various strata of the earth, from which water rises spontaneously.

Q. *Why are they so called ?*

A. From Artois in the north of France, where much attention was formerly paid to the discovery of subterranean springs.

Q. *What is meant by an AQUEDUCT ?*

A. An artificial structure by which streams are conducted from their sources across valleys, and through mountains.

Q. *By what people was the construc-*

tion of AQUEDUCTS carried to great perfection?

A. By the Romans, who expended an enormous amount of labour upon them. The ruins of several of these splendid works remain.

Q. *What is a CANAL?*

A. An artificial channel of water, usually constructed for inland navigation.

Q. *Which is the most noted CANAL in England?*

A. The Grand Trunk Canal constructed by James Brindley; it connects the Mersey with the Trent and Humber.

Q. *What great continents are connected by a CANAL?*

A. Asia and Africa, by the Suez Canal which extends from Port Said in the Mediterranean to the Red Sea.

Q. *In what year was it completed?*

A. In 1869, when it was opened by the Empress Eugenie.

Q. *What is its length?*

A. About ninety-nine miles.

Q. *What is a* HYDROMETER ?

A. The name is derived from two Greek words, signifying measure of water ; it is an instrument used for ascertaining the density of different fluids.

Q. *What is meant by* ACOUSTICS ?

A. The science which treats of the nature of sound, and its effects on the human ear.

Q. *At what rate does* SOUND *travel ?*

A. About 1142 feet in a second, or 13 miles a minute.

Q. *What is the cause of* ECHO ?

A. The undulations in the air striking against any obstacle, such as a hill or the wall of a house.

Q. *What places are most famous for* ECHO ?

A. The aisles of cathedrals, caverns, grottoes, mountains, and icebergs.

Q. *Can you tell me of some celebrated* ECHOES ?

A. There is one at Rosneath, about seventeen miles from Glasgow, where if a trumpeter plays a tune, the echo will

begin the same tune and repeat it, and when this has ceased, another, and again another echo will repeat it. There is also a remarkable echo at the Lakes of Killarney in Ireland.

Q. *Where is there a still more wonderful ECHO?*

A. At Sinonetta palace, near Milan, where a single word is repeated more than forty times.

Q. *On what does the WHISPERING GALLERY of St. Paul's depend?*

A. On the principle that the voice applied to the wall at one side of the gallery, the sound is easily reflected to the other.

Q. *How can deaf people hear through an EAR TRUMPET?*

A. It restrains the spread of the voice, the sounds being reflected from the sides.

Q. *When were SPEAKING TRUMPETS invented?*

A. In 1652.

Q. *What is a LIFE-BOAT?*

A. A boat used for saving the lives

of persons in a sinking ship ; they are lined with cork, and contain tight cells full of air along their sides.

Q. How are the sailors who man them preserved from being washed over-board ?

A. They are usually lashed to the boat, and are sometimes provided with life-preserving belts.

Q. Of what are these BELTS made ?

A. They are India-rubber bags filled with air.

Q. What is meant by GNOMONICS ?

A. The science which teaches the art of finding the just proportions of shadows for the construction of sundials.

Q. How is time marked by a SUN-DIAL ?

A. The hours of the day are marked at the places where the sun's shadow is thrown at each hour.

Q. Are not SUN-DIALS of great antiquity ?

A. The earliest historical notice, is the dial of King Ahaz, who lived 742 B.C.

Q. *What other inventions were made by the ancients for the measurement of TIME ?*

A. Water-clocks and sand-glasses.

Q. *Can you describe the CLEPSYDRÆ or WATER-CLOCK ?*

A. It consisted of a jar containing water, which slowly escaped by a hole at the bottom, while the oar of a miniature boat on the surface, as it sank with the fall of the water, pointed out the hours, which were marked on the side of the jar.

Q. *What is WINE ?*

A. The fermented juice of grapes and vegetables.

Q. *What causes the great variety in the colour and quality of WINES ?*

A. The different species of grapes, produced by the varieties of soil, cultivation and climate, and the peculiar mode of fermentation.

Q. *What causes the difference between red WINE and white ?*

A. Not so much the quality of the grape, as the preparation of it.

Q. *How does this occur?*

A. If the juice of the red grape be carefully pressed, and fermented separately from the skins, it forms a white wine.

Q. *But I suppose if the skins be pressed, and remain during fermentation, the WINE is red?*

A. Yes ; but there are white grapes as well as red, which also cause a difference in wine.

Q. *What WINE is most consumed in England?*

A. That called red port.

Q. *Where does this WINE come from?*

A. Oporto, a rich and handsome town in Portugal ; it has its name from the city, in the neighbourhood of which the vines are cultivated.

Q. *Is there not a wine called WHITE PORT?*

A. Yes, it comes from Portugal, and was some years ago much used ; but now it is seldom called for.

Q. *What is LISBON?*

A. A sweet white wine produced near Lisbon, the capital of Portugal.

Q. From whence does MADEIRA come?

A. From the Madeira and Canary Islands in the North Atlantic Ocean, off the coast of Africa.

Q. Is it not considered by far the most valuable WHITE WINE?

A. Yes, particularly after it has been ripened by a voyage or two to the East Indies, it is then called East India Madeira.

Q. What is MALMSEY MADEIRA?

A. A rich luscious white wine, brought from the Canary Islands; it used to be called Canary sack, and is much spoken of in Shakspeare.

Q. Where did the vines grow which produced this fine wine?

A. In Candia, and in Malvesia, one of the Greek islands; it was afterwards transplanted to the Canary Islands.

Q. Is much of this wine made?

A. No, it is so scarce that few persons possess it.

Q. What PRINCE was drowned in a butt of Malmsey wine?

A. The Duke of Clarence, brother of Edward IV.

Q. *Where is CANDIA?*

A. An island in the Mediterranean Sea.

Q. *What is SHERRY?*

A. A strong white wine brought from Xeres, not far from Seville, in Andalusia, in Spain.

Q. *What is MOUNTAIN WINE?*

A. It is a sweet luscious Spanish white wine, made from the full-ripe grapes which grow on the mountains around Malaga.

Q. *What is TENT WINE?*

A. A sweet red wine called tent, or *tinto*, because it is a *white* wine coloured. From this process it becomes a very rich and excellent red wine.

Q. *Is not TENT WINE made from the juice of a particular kind of grape?*

A. Yes, and they are not used for the wine until some time after they have been perfectly ripe.

Q. *What places produce it?*

A. Alicant and Malaga; indeed, the

same grapes which produce mountain wine are used for *tent*, or *tinto*, being only coloured ; and this wine is known there by the name of *vino tinto*.

Q. *From what place do we chiefly import this wine?*

A. From Cadiz.

Q. *Where is CADIZ ?*

A. A fortified city in Spain, in Andalusia, with a good harbour. It is the centre of the Spanish commerce to America and the West Indies.

Q. *Where is MALAGA ?*

A. A city in Granada, in the south of Spain. It has a stupendous cathedral, built by Philip II., while married to Mary of England.

Q. *Where is ALICANT ?*

A. A city and sea-port of Valencia, in Spain.

Q. *Does not Germany produce many excellent WINES ?*

A. Yes ; Tokay, Hock, Rhenish, and Moselle are the most celebrated.

Q. *What is TOKAY ?*

A. A very scarce and expensive

wine, brought from a town of the same name in Hungary, near which it is chiefly made.

Q. *What is the hill called that produces the GRAPES of which this wine is made?*

A. The Sugar Hill. The common grapes are mixed with a portion of luscious, half-dried shrivelled grapes, which grow on this hill.

Q. *What renders it so scarce?*

A. The small quantity that is made of it, and its being principally bought by the nobility of Hungary.

Q. *What GERMAN WINE is in the greatest request in England?*

A. Hock; it has its name from the town of Hochstadt, and is a pleasant wine in summer.

Q. *What are RHENISH and MOSELLE?*

A. They are produced chiefly on the banks of the Rhine and Moselle rivers, and have a cool, sharp taste.

Q. *Are not the GERMANS very curious in their WINES?*

A. Yes; before the late wars many

of the nobility had wines in their cellars that were more than a hundred years old.

Q. *Had they not lost all their goodness?*

A. No ; they had been made so rich and good that they remained uninjured, even by so great an age.

Q. *Are not the FRENCH WINES celebrated?*

A. Yes ; the most valued is Champagne. It is of two kinds, still Champagne and sparkling Champagne.

Q. *What is still or quiet CHAMPAGNE?*

A. The wine that has gone through the whole process of fermentation.

Q. *What is SPARKLING CHAMPAGNE?*

A. That which has been bottled before the fermentation was complete.

Q. *What is VIN DE GRAVE?*

A. A French wine made near Bordeaux.

Q. *What is PONTAC?*

A. Another French wine, made in Guienne.

Q. *What are FRONTIGNAC and MUSCADEL?*

A. White wines, the delicious productions of Languedoc.

Q. *From what is the name MUSCADEL derived?*

A. Some suppose from the grape having a little of the flavour of musk, and others from *Musca*, a fly, because the flies are extremely fond of its grapes.

Q. *What is BURGUNDY?*

A. A fine red wine, which has its name from the province where it is made.

Q. *What is CLARET?*

A. A thin, highly-flavoured red wine, much drunk and esteemed in England.

Q. *Where does it come from?*

A. The neighbourhood of Bordeaux.

Q. *What is HERMITAGE?*

A. A red wine produced from vineyards on the east banks of the Rhone.

Q. *What town in France is famous for this WINE?*

A. The little town of Tain, near Lyons; it is made from a small black grape of a rough flavour.

Q. *What is CÔTE ROTIE?*

A. A wine made from the vineyards on the opposite side of the river Rhone.

Q. *What is ROTA WINE?*

A. A rich and sweet white wine, produced in Rota, in Seville.

Q. *Pray is ITALY famous for wine?*

A. It was among the ancients, but now their wines are thin and bad.

Q. *Does it not produce one good sort?*

A. Yes, that called Lachryma Christi. It is a luscious red wine, produced from the vineyards on Mount Vesuvius.

Q. *What is FALERNIAN WINE?*

A. It was a wine much celebrated by the ancient poets, particularly Virgil and Horace.

Q. *What part of ITALY produced it?*

A. Falernus, a fertile mountain and plain of Campania, a part of Italy considerably south-east of Rome.

Q. *What is* CONSTANTIA ?

A. A very rich sweet wine, made at the Cape of Good Hope.

Q. *Is there not* RED *and* WHITE CONSTANTIA ?

A. Yes, it is made about eight miles from Cape Town, at a farm of the same name.

Q. *What causes the* GRAPES *of this farm to be so very fine?*

A. Some peculiarity in the soil. The wine is made with great care, no fruit being used but what is fully ripe, and in the highest perfection.

Q. *When is this* WINE *in perfection?*

A. In about two years ; when kept six or seven, it ferments and loses its flavour.

Q. *What is* SCHIRAS WINE ?

A. A very fine Persian wine, very much esteemed. The town is delightfully situated in a fertile plain, and contains so many beautiful gardens that it is styled an earthly Paradise, and the Athens of Persia.

Q. *What WINES are made in ENGLAND?*

A. Those called British wines from gooseberries, currants, elder-berries, and several other fruits, but they are much inferior in strength and flavour to foreign wines.

Q. *How is WINE kept?*

A. In glass bottles.

Q. *What sort of BOTTLES were used by the ancients?*

A. They were made of leather.

Q. *What is NOYEAU?*

A. A delightful cordial, made of white brandy and sweet and bitter almonds, with other kernels.

Q. *Where is the finest made?*

A. At Martinique, one of the West India Islands.

Q. *What was HIPPOCRAS?*

A. A costly beverage, used chiefly at royal banquets, in which the Champion, out of a golden cup, pledged the king at his coronation.

Q. *What was it composed of?*

A. Red wine, cinnamon, ginger, and

other spices, run through a woollen bag, in the same manner as our modern jellies.

Q. *Why is it called* HIPPOCRAS ?

A. From the bag being termed "*Hippocrates' sleeve*," through which it was strained. It was so expensive that it was never presented more than once during the feast.

Q. *What is* CAPILLAIRE ?

A. A luscious syrup formed of sugar and a juice extracted from a plant called maiden-hair.

Q. *Where is this* PLANT *found ?*

A. It is an herb which grows on rocks and old ruins in the southern parts of France and the Mediterranean.

Q. *What is* RATAFIA ?

A. A cordial prepared by infusing in brandy the kernels of several kinds of fruit, particularly of cherries and apricots, adding also sugar, cinnamon, cloves, and other spices.

Q. *What is* USQUEBAGH ?

A. A strong cordial made of barley, tinged with saffron, and sweetened with sugar. Spirits of wine are also added.

Q. *What is BRANDY ?*

A. A spirituous liquor distilled from wine.

Q. *What is the difference between WINE and SPIRITS ?*

A. Wine is *fermented* and spirits *distilled*.

Q. *What do you mean by DISTILLING ?*

A. It is to draw off, drop by drop, the spirit of any body, by means of fire placed above or under the vessel that contains the liquor; a steam or vapour arises, which is passed through a long tube immersed in cold water, by which it becomes condensed into a fluid.

Q. *Whence have we the finest BRANDY ?*

A. From Bordeaux, Languedoc, and Anjou. From the latter comes the well-known Cognac brandy.

Q. *What is the colour of BRANDY when it comes from the still ?*

A. White as water; it is coloured partly by the oaken casks in which it

is kept, and partly by burnt sugar, and other harmless things.

Q. *Do these things affect the quality of the spirit?*

A. Not in the least.

Q. *What is HOLLANDS or GENEVA?*

A. It is a spirit made in Holland, where the only true Geneva is distilled; it is flavoured with juniper berries, the French word for which is "*genévre*."

Q. *From whence are JUNIPER BERRIES imported?*

A. From Holland and Italy.

Q. *What is ENGLISH GIN?*

A. It is distilled from malt spirits, flavoured with oil of turpentine.

Q. *What is WHISKY?*

A. A very strong spirit distilled from barley, much liked and used by both the Scotch and Irish.

Q. *Has it not a peculiar smoky flavour?*

A. Yes; it arises from the fuel called peat, which is used to heat the still.

Q. *What is CIDER?*

A. The fermented juice of apples.

Q. *What counties are particularly famous for CIDER?*

A. Herefordshire and Devonshire.

Q. *How is it made?*

A. The apples are pressed in a machine, and the fermented juice is put into casks.

Q. *What is PERRY?*

A. The fermented juice of pears.

Q. *What counties are famous for it?*

A. Worcestershire and Herefordshire.

Q. *What is VINEGAR?*

A. An acid liquor made from malt; but wine, beer, cider, &c., may be turned into vinegar, by exposing the vessel to the hot sun.

Q. *What is MEAD?*

A. A liquor made from honey and water, fermented with yeast.

Q. *What is HONEY?*

A. The syrup of flowers, drawn from the opened buds by the industrious bee.

Q. *What is VIRGIN HONEY?*

A. The honey made by the young bees, which is purer than any other.

Q. *What is MANNA?*

A. A sweet syrup, or sap, that flows from several kinds of ash-trees, as gum does from plum trees.

Q. *How is it prepared?*

A. It hardens and dries on the tree like gum, when it is carefully gathered.

Q. *Where does the best come from?*

A. Calabria and Sicily.

Q. *Where is CALABRIA?*

A. A peninsula in the South of Italy.

Q. *What is HONEY-DEW?*

A. A sweet liquid shed by a small insect called the "aphis," and deposited in autumn on the under surface of leaves.

Q. *Does HONEY-DEW injure the tree?*

A. Very much, for it fills the pores of the leaf in consequence of which it can neither transpire, nor absorb its needful food.

Q. *What insect devours the APHIS ?*

A. The lady-bird, thereby doing good service in large plantations.

Q. *Are not many INSECTS of great service to man ?*

A. Yes ; they help to keep in check the increase of others which would destroy our crops, and mutilate our flowers.

Q. *Name some of the most useful of these INSECTS ?*

A. The ear-wig which feeds on the plant-lice that infest our apple-trees ; the ichneumon-fly that feeds on the eggs of insects deposited in cabbages and wheat ; the water-bugs and gnats, that may be called the scavengers of our ponds and ditches.

Q. *What animals feed on INSECTS ?*

A. Fishes, birds, reptiles, and some quadrupeds.

Q. *Name some of the INSECT-EATING QUADRUPEDS ?*

A. Moles, shrews, hedgehogs, squirrels, badgers, bears, and ant-eaters.

Q. *What are MOLES ?*

A. Small quadrupeds, whose bodies are covered with a soft velvet-like fur, which has the singular property of lying smooth in every direction.

Q. *What is remarkable of the HEDGE-HOG.*

A. Its body is covered with sharp spines, and when attacked by an enemy it rolls itself up like a ball, and the little spines defend it from danger.

Q. *What INSECTS do bears eat?*

A. Ants.

Q. *What INSECTS do BADGERS devour?*

A. Beetles, which are also eaten by foxes and cats.

Q. *Are INSECTS ever used by man for food?*

A. In some countries grasshoppers, locusts, and even ants and spiders are eaten.

Q. *What people eat SPIDERS?*

A. Many of the African tribes.

Q. *What kind of animal is the ANT-EATER?*

A. It is about the size of a fox ; it has a long snout, a small mouth, and a large round tongue, with which it penetrates into the ants' nests.

Q. *What animals furnish man with milk ?*

A. The cow, the goat, and the ass.

Q. *Where is GOAT'S MILK particularly valuable ?*

A. On board a ship, where the goats thrive better than any other animal.

Q. *What is ASSES' MILK good for ?*

A. It is light and nourishing, and much drunk by sick persons and children.

Q. *Whence are ORANGES brought ?*

A. From Majorca and Minorca, also Lisbon, and most of the Islands and places in the Mediterranean sea.

Q. *How many ORANGES will a good tree bear ?*

A. From 1000 to 2000.

Q. *Where is there now an ORANGE TREE nearly 400 years old ?*

A. In the gardens of Versailles ; it belonged to the Constable de Bourbon,

in the reign of Francis I., cotemporary with our Henry VIII.

Q. *Is it very large?*

A. It is thirty feet high, and branches off into two stems, each as large as a common orange tree.

Q. *What story is related concerning the first ORANGE TREE, which was the parent of all the multitudes now in Europe?*

A. It was the only plant that lived out of a great number, sent as a present from Asia to the Conde Mellor.

Q. *Who was he?*

A. Prime minister to the king of Portugal.

Q. *What well-known PERFUME is made from the rind of the orange?*

A. Bergamot; it is made near the town of Bergamo in Italy; the rind is cut into small pieces, and the oil pressed out into glass vessels.

Q. *What are SEVILLE ORANGES?*

A. A large, bitter, dark-coloured, and rough-skinned orange, much used in medicine and cookery.

Q. *What delicious PRESERVE is made from the orange?*

A. That called marmalade, which is considered very wholesome and nutritious.

Q. *How is it made?*

A. The pulp of the orange is pounded and mixed with sugar by machinery at a most rapid rate.

Q. *What is the number of SEVILLE ORANGES annually imported?*

A. It is computed at 50,000 chests, each chest containing, on an average, 1,000 oranges.

Q. *Whence comes the ST. MICHAEL ORANGE?*

A. From the Azores, where the gardens are extremely beautiful.

Q. *To whom do these islands belong?*

A. To the Portuguese, by whom they were taken in the fifteenth century; they were so called from the innumerable hawks, which, with other birds, were then their only inhabitants.

Q. *How is the MALTA ORANGE distinguished?*

A. By its ruby-coloured pulp, resembling the pomegranate.

Q. *What is the SHADDOCK ?*

A. A fruit of the orange kind, as large as the head of a child, common in both the East and West Indies.

Q. *From whom does it derive its name ?*

A. From a Captain Shaddock, who brought it from China, or, as some say, from Guinea, and planted it in the West Indies.

Q. *Whence have we LEMONS ?*

A. Principally from Spain and Portugal.

Q. *What country is the LEMON TREE a native of ?*

A. Assyria and Media, in Asia; they were afterwards planted in Greece, and other southern parts of Europe.

Q. *Is it not a delightful acid ?*

A. Yes, and much used in cookery, confectionery, and medicine.

Q. *Are they not also much used by calico printers ?*

A. Yes, to discharge colours from iron.

Q. *What is essential salt of LEMONS :*

A. It is a preparation made from the juice of sorrel, used for taking out ink stains from linen.

Q. *What kind of fruit is the CITRON ?*

A. A sort of lemon, only larger, and the pulp firmer ; it is principally used in sauces.

Q. *What is the LIME ?*

A. A kind of lemon, though a much smaller fruit, about the size of an egg ; the juice is much preferred to the lemon.

Q. *Where do they grow ?*

A. In North America and the West Indies, where they are to be seen at all entertainments.

Q. *What is the juice used for ?*

A. Citric acid is prepared from it.

Q. *What is SAMPHIRE ?*

A. A plant which grows on the sea-shore, and in cliffs by the sea ; it makes an agreeable pickle.

Q. *What is SHERBET ?*

A. A favourite Turkish beverage,

made from the juice of the lime, and other fruits.

Q. Have not all the fine VEGETABLES and delicious FRUITS we now enjoy in England, been introduced into it from other countries?

A. Yes; it was not until the latter end of the reign of Henry VIII., about 1547, that salads, carrots, turnips, cabbage, and other eatable roots were produced in England.

Q. What countries furnished England with VEGETABLES before she cultivated them?

A. Holland and Flanders: the court was tolerably supplied, but the rest of the country scarcely knew the taste of them.

Q. Is not the POTATO one of the most useful roots we possess?

A. Yes, it forms the principal food of most of the poor in this country, but in Ireland they chiefly live upon it.

Q. To what country are we indebted for such a valuable plant?

A. It has been said that Sir Francis

Drake first brought it from Santa Fè, in New Mexico, North America.

Q. But what great man is said to have first planted them in Ireland?

A. Sir Walter Raleigh, at Youghall, in the county of Cork, in 1610, in the reign of James I.

Q. What country in England is thought to excel in this vegetable?

A. Lancashire; Formby, a few miles north of Liverpool, is remarkable for producing the best in the country.

Q. What old story is related with regard to this?

A. It is said that a vessel, laden with potatoes, from Ireland to London, was driven on shore at Formby, and occasioned them to be first planted at that place.

Q. When were ASPARAGUS, ARTICHOKES, CAULIFLOWERS, BEANS, and PEAS introduced?

A. About the time of Charles II.

Q. What is SOUR-CROUT?

A. It is prepared from all kinds of cabbage, and is a favourite food among

the Germans, and people of other northern countries on the Continent.

Q. *Were not the Greeks and Romans well acquainted with these plants?*

A. Yes, and they were much used and cultivated by them.

Q. *Are not TURNIPS a most useful vegetable?*

A. Yes, they were brought into this country from Hanover and Germany.

Q. *In what county are they now much cultivated?*

A. In Norfolk ; but in all parts of England they are grown, as they afford such fine food for sheep and cattle.

Q. *What are TRUFFLES ?*

A. A fungus without root, which grows at the depth of four or five inches in the earth, from the size of a pea to that of a potato.

Q. *How are they discovered?*

A. By means of dogs which are taught to hunt for them by scent, and when they smell one, they bark, and scratch it up ; in Italy, they are hunted for by pigs.

Q. *How are they served at table?*

A. Either roasted in a fresh state, like potatoes, or cut into slices and dried, to flavour sauces and soups.

Q. *It does not appear then that our island possessed many native fruits?*

A. No; nuts, acorns, crabs, sloes, blackberries, whortleberries, hips and haws, were the only fruit of the island.

Q. *What are SLOES?*

A. A very small purple-coloured plum, exceedingly sour even when ripe.

Q. *What are CRABS?*

A. A very small kind of apple.

Q. *What are BLACKBERRIES?*

A. Small fruits, something like mulberries, having a flat sweet taste.

Q. *What are WHORTLEBERRIES?*

A. They are something like small black currants, they are found on bushes, among the heath, in various parts of the country.

Q. *What sort of NUTS grow wild?*

A. Hazel nuts and cob nuts.

Q. *Whence are the filbert nuts imported?*

A. France and Spain.

Q. *What are HIPS and HAWS ?*

A. Hips are the red seed-pods of the wild rose ; haws are the red berries of the hawthorn.

Q. *In what ancient festival were the flowers of the HAWTHORN in much request ?*

A. That of May-day, when even in London May-poles were seen throughout the city.

Q. *Was not this festival observed by royalty as well as by the common people ?*

A. Yes ; we read of Henry VIII. and Queen Catherine riding from Greenwich to Shooter's Hill to join in the sport.

Q. *From what place had we the APPLE ?*

A. From Persia ; it is produced in an artificial manner, by a process termed grafting.

Q. *What is GRAFTING ?*

A. It is inserting young shoots of such trees as bear valuable fruit into

a crab stock, which is plastered and bound up, till it grows to it.

Q. *Will it then produce fruit of the same quality as the tree from which it was taken?*

A. Yes; and this process is used for propagating nearly every kind of fruit tree.

Q. *What do you mean by PROPAGATING.*

A. Increasing.

Q. *Why do they not raise them from SEED?*

A. Because they would only be like wild fruit, and never come to perfection.

Q. *Is the PEAR much cultivated?*

A. Yes; it is a well-known garden fruit, the wood is light and smooth, of a yellow colour.

Q. *What is it useful for?*

A. Picture frames that are to be stained black; carpenters' and joiners' tools; also the common kind of flat rulers.

Q. *What country produced the PINE?*

A. This best and finest-flavoured of

all known fruits was brought to England in 1690, from South America.

Q. Where do they grow in great perfection in the open ground?

A. In South America and the West Indies.

Q. How do we raise this fine FRUIT in Europe?

A. In hot-houses ; they are a luxury for the rich. The pots which contain them are sunk in beds of bark, after it has been used by the tanners.

Q. When is this FRUIT in perfection?

A. From the middle of August to the end of September. When brought to table their leafy crowns should be saved for planting.

Q. When were GREENHOUSES introduced into England?

A. In the reign of William III. They are mentioned as a very curious contrivance to raise and preserve tender plants.

Q. What other name is given to a GREENHOUSE?

A. A conservatory.

Q. *What is a HOTHOUSE ?*

A. It is made of glass like a greenhouse, and heated with fire.

Q. *What country produced the PEACH ?*

A. Persia. It was so tender a fruit that for many years, of all the Roman provinces, it grew no nearer than Egypt.

Q. *But is it not now universal in Europe ?*

A. Yes ; as well as the nectarine, which is a smooth-skinned variety of peach, but of a richer and more delicious flavour.

Q. *Where did the APRICOT and QUINCE come from ?*

A. Epirus, Carthage, Armenia, and Syria.

Q. *Where was EPIRUS ?*

A. An ancient kingdom of Greece. It is now called Larta.

Q. *Where was CARTHAGE ?*

A. In the north of Africa. Queen Dido founded it. Tunis stands on its ruins.

Q. *Where is ARMENIA ?*

A. In Asia, near the Euphrates. It is a very fertile country, watered by several fine rivers.

Q. *Where is SYRIA ?*

A. In Asia. Damascus is the capital.

Q. *Is it not supposed that the APRICOT is a native of AFRICA ?*

A. Yes ; it appears to have come from thence, through Persia and Greece, to us, with the name of "*Apricus*," which signifies "sunny."

Q. *What country first furnished us with the GOOSEBERRY ?*

A. Flanders ; it is a most useful common fruit.

Q. *Is not the CURRANT TREE said to have been first brought from ZANTE ?*

A. Yes, and planted in England in the reign of Henry VIII.

Q. *Whence have we CHERRIES ?*

A. This well-known fruit formerly grew wild in the woods near Cerasus, in Pontus.

Q. *Where is PONTUS ?*

A. On the southern coast of the Black Sea.

Q. *Who first brought them to ROME?*

A. Lucullus, a Roman general.

Q. *And when were they planted in ENGLAND?*

A. In Henry the Eighth's time.

Q. *Do not the SWISS distil a strong spirit from the WILD BLACK CHERRY?*

A. Yes; and sell it to the French and Germans at a considerable profit.

Q. *Is not the WOOD and GUM also valuable?*

A. Yes; the wood is much used by turners and cabinet-makers, and the gum is very nourishing.

Q. *What story is related by HASSELQUIST to prove this?*

A. He informs us that during a siege more than 100 men were kept alive for two months by putting a little of this gum into their mouths, and letting it dissolve.

Q. *Who was HASSELQUIST?*

A. A Swedish botanist and natural historian, born in East Gothland, in 1722.

Q. What are MEDLARS ?

A. A native English fruit, having been remarked more than a century ago to grow wild in the hedges about Minshull, in Cheshire.

Q. What is their appearance ?

A. They look half rotten when brought on table, for they are placed in moist bran for a fortnight, to prepare them for eating.

Q. What is the POMEGRANATE ?

A. An apple-shaped fruit, with a thick rind and a rich scarlet flower, most highly valued by the Greeks and Romans.

Q. What are CRANBERRIES ?

A. A small red fruit, about the size of a pea, which grows in the morasses and bogs in the North of England, Lincolnshire, and Cambridgeshire.

Q. Is not the COLLECTING of CRANBERRIES a disagreeable employment ?

A. Yes ; for each berry grows on a separate stalk, and the gathering is damp, dirty work.

Q. What TOWN is famous for them ?

A. Longtown, in Cumberland. Their rich flavour is generally esteemed.

Q. *Are not many brought to this country from NORTH AMERICA and RUSSIA ?*

A. Yes ; they are a larger fruit, but not so pleasant.

Q. *What use do the INHABITANTS of SWEDEN make of this FRUIT ?*

A. They use it to clean their silver plate.

Q. *What are GUAVAS ?*

A. The guava is a West Indian fruit, equally delicious and wholesome. It is eaten raw, but is prepared as a sweetmeat in many ways, particularly in that form called guava jelly.

Q. *Whence have we TAMARINDS ?*

A. From both the Indies. They make a most delightful preserve.

Q. *To what PEOPLE are we indebted for the use of TAMARINDS ?*

A. To the Arabians. In hot climates they are used as a cooling and agreeable drink.

Q. *What are PLUMS ?*

A. A well-known fruit in England. The magnum bonum or egg plum, the green-gage, and many others, all originally came from the wild plum.

Q. *What are PRUNES ?*

A. French plums dried. They are usually very prettily packed in boxes, and exported.

Q. *Whence do they principally come from ?*

A. Brignolles, a town of Provence, and near Marseilles. This is one of the most famous places in France for dried plums ; also Bordeaux, a rich town in Guienne.

Q. *What are RAISINS ?*

A. Very ripe grapes, prepared by drying them in the sun.

Q. *Where do they come from ?*

A. Most of the southern countries of Europe.

Q. *What CITY produces the finest, called JAR RAISINS ?*

A. Damascus, the capital of Syria.

Q. *What are CURRANTS ?*

A. A small dried grape, anciently

growing in the Isthmus of Corinth, whence they obtained the name of Corinths, since corrupted to currants.

Q. Where do they chiefly come from now?

A. Most of the islands in the Archipelago, particularly Zante.

Q. Are the NATIVES acquainted with the use we make of them?

A. No ; they imagine we use them in the dying of cloth, and are ignorant of our luxury of Christmas pies and plum-puddings.

Q. What are FIGS?

A. The rich soft fruit of the fig-tree.

Q. Does it not appear from history that the FIG-TREE was much valued by the ANCIENTS?

A. Yes ; it was the most common and favourite fruit of the ancient Greeks and the peasants of Italy.

Q. How are they PREPARED?

A. They are dried in a furnace or in the sun, after being dipped in a scalding ley made of the ashes of the fig-tree.

Q. *Where do they come from?*

A. The best from Turkey, Italy, and Spain ; the finest are packed in boxes, called drums.

Q. *How many crops does the FIG-TREE produce in a year?*

A. Three ; the first ripen about the end of June ; the second are gathered for exportation in August ; and lastly the winter figs hang and ripen on the tree after the leaves are shed.

Q. *What city of Turkey is noted for its great FIG MARKET.*

A. Smyrna.

Q. *Is the FIG-TREE ever cultivated in England?*

A. In the southern counties it may be seen occasionally, where it will bear tolerably fine fruit in the open air.

Q. *Was not the wood of the FIG-TREE much valued by the ANCIENTS?*

A. Yes ; for, although of a spongy texture, it is most durable, and on this account was formerly used in Eastern countries as coffins for embalmed bodies.

Q. *What are ALMONDS ?*

A. A kernel which is contained in a tender shell, with many small holes on the outside.

Q. *What countries furnish us with this pleasant NUT ?*

A. France, Spain, Italy, and the Levant ; they are packed in casks and boxes.

Q. *What is their use ?*

A. They are eaten with raisins in desserts, also in confectionery ; and by pressure they yield a great deal of oil used in medicine.

Q. *What are COCOA-NUTS ?*

A. A woody fruit, covered with a fibrous husk, growing in most hot climates, with a firm white kernel.

Q. *Is it not a most beautiful, as well as useful tree ?*

A. Yes ; it is a species of palm, and grows forty to sixty feet high ; it has no leaves except at the top, which appear like immense feathers, each fourteen feet long.

Q. *How does the FRUIT grow on this curious tree ?*

A. The nuts hang down from the summit in clusters of a dozen or more together.

Q. *Does it not afford food, milk, oil, clothing, and shelter?*

A. Yes; the nut is like a filbert, it yields an oil when pressed like almonds, and when fresh, a quantity of milk is found in it.

Q. *From what part are cloth, sails, and cordage made?*

A. From the fibrous substance which surrounds the nut, and the trunk is made into boats, so that every part of this tree is of use.

Q. *Where is the COCOA-NUT palm found?*

A. In many of the islands of the South Seas, and other tropical climates.

Q. *Is there not a very remarkable species of COCOA-NUT found in some of the Seychelle Islands?*

A. Yes; it is a double cocoa-nut, and is much esteemed by the sailors who visit those islands.

Q. *Where are the SEYCHELLE ISLANDS ?*

A. In the Indian Ocean, near Madagascar.

Q. *What is VEGETABLE IVORY ?*

A. It is the produce of a palm that grows on the banks of the Magdalena, in New Granada.

Q. *What is it used for ?*

A. The Indians make toys of it, for it is very white, and so like real ivory, you could hardly tell it was not part of an elephant's tusk.

Q. *Which is the noblest of the PALMS ?*

A. The talipot found in the island of Ceylon. It is very tall and straight, and reaches the height of two hundred feet.

Q. *For what purpose do the natives use the leaves of the TALIPOT ?*

A. To write upon ; the books made of it much resemble those of Egyptian papyrus.

Q. *Do not many of the PALMS bear very lovely flowers ?*

A. In many they are as beautiful as

the trees ; some are of a brilliant white, rendering them visible at a great distance ; but generally, the blossoms are of a pale yellow.

Q. *What is the CAROB ?*

A. It is the fruit sometimes called St. John's bread-tree ; it is a succulent pulp found in a long thick pod.

Q. *Where does it grow ?*

A. In some of the islands in the Levant.

Q. *What are CAPERS ?*

A. The unopened flower-buds of a little creeping shrub which grows wild in the South of France, and upon the walls of Rome, Sienna, and Florence.

Q. *Where is this SHRUB largely cultivated ?*

A. Between Marseilles and Toulon, also at Toulon and Majorca.

Q. *What do they do with them ?*

A. Pickle them ; they are much used in sauce for boiled mutton, and sometimes in medicine.

Q. *Whence have we OLIVES ?*

A. From Italy, Spain, and the southern parts of France.

Q. *Are they eaten fresh?*

A. No, they are pickled in salt and water.

Q. *Are they considered healthy?*

A. Not for persons of delicate habits, on account of the great quantity of oil contained in them.

Q. *What is this OIL called?*

A. Sweet oil, or oil of olives.

Q. *What is it used in?*

A. Salads, and many other things.

Q. *What island once abounded with forests of OLIVE-TREES?*

A. Cyprus; and immense cisterns are still to be seen, which were erected for the purpose of preserving the oil.

Q. *What people used the ceremony of washing the feet and anointing the head with oil to a guest?*

A. The Jews: they also considered it a remedy against the bite of all venomous reptiles.

Q. *Who is said to have been cast into a cauldron of boiling oil at Rome?*

A. St. John the Evangelist, by the command of the Emperor Domitian ; but instead of destroying him, he was not even hurt.

Q. *Where was he afterwards banished ?*

A. To the island of Patmos, where he wrote the Revelation.

Q. *Where is PATMOS ?*

A. An island in the Archipelago ; St. John died at Ephesus, in Asia Minor.

Q. *What is the OLIVE-TREE considered as a symbol of ?*

A. Peace.

Q. *Is it not also used in medicine ?*

A. Yes ; it is said to be a remedy against the bite of a viper.

Q. *What is COMMON or TRAIN-OIL ?*

A. The fat of whales.

Q. *What is this FAT called ?*

A. Blubber ; it is found beneath the skin to the depth of ten or twelve inches.

Q. *What is it used for ?*

A. It is burnt in lamps, and is very

useful in cleaning wool, and in other manufactures.

Q. *What OILS are most frequently used in table-lamps?*

A. Paraffin, petroleum, colza oil, and benzoline.

Q. *How is PARAFFIN obtained?*

A. It is distilled from gas-tar in the manufacture of gas.

Q. *What is PETROLEUM or ROCK-OIL?*

A. It is a species of fluid bitumen, flowing from beds associated with coal strata.

Q. *What is BITUMEN called when in its most fluid state?*

A. Naphtha.

Q. *What is BENZOLINE?*

A. It is distilled from paraffin.

Q. *Whence do we obtain PETROLEUM?*

A. The best comes from Italy, where there are springs with their surfaces covered with rock-oil.

Q. *Why is it called ROCK-OIL?*

A. Because the springs upon which it is found flow out of a rock.

Q. *What is the signification of the word PETROLEUM ?*

A. It is derived from two Greek words, *petra*, rock, and *oleum*, oil.

Q. *Is not this OIL sometimes found upon the sea near Mount Vesuvius ?*

A. Yes ; it rises to the top in bubbles, and the people skim it off as they sit in their boats.

Q. *From what other part of the world do we obtain this OIL ?*

A. From Kentucky, in the United States.

Q. *What is its COLOUR ?*

A. The best is pure white, but some is yellow, some red, and some black ; the latter is the least pure.

Q. *Is there still another sort of OIL ?*

A. Yes ; there is an oil, called colza, obtainable from rape-seed, by pressure.

Q. *What is RAPE-SEED ?*

A. A grass-like plant, which grows on a rich soil, and is so fine, that they thrash it on a large cloth in the field.

Q. *After the OIL has been pressed out of it, what is the remainder called?*

A. Oil-cake ; it is much used for fattening oxen.

Q. *Where does it grow?*

A. In several parts of England.

Q. *What is NEAT'S-FOOT OIL?*

A. It is procured from the feet of oxen, and is of great use in preparing and softening leather.

Q. *What is LINSEED-OIL?*

A. It is pressed from the seed and pods of flax, and is useful in medicine and the arts.

Q. *What is ISINGLASS?*

A. It is made of the sounds and air-bladders of fish.

Q. *What fish particularly furnishes ISINGLASS?*

A. The sturgeon, found in the River Wolga ; the Russians long kept the secret of preparing it.

Q. *What is it useful for?*

A. It is used by brewers and others for fining and clearing all fermented

liquors ; also in medicine, and in cookery for making jellies.

Q. *Are not vast quantities of STURGEON caught annually in the Caspian Sea?*

A. Yes, from 3 to 400,000 ; and from a species called the starred sturgeon, the best caviar and the strongest isinglass are obtained.

Q. *What is CAVIAR?*

A. A food made from the roes of the sturgeon, much eaten by the Russians.

Q. *What is done with all STURGEONS caught near London?*

A. They are taken to the Lord Mayor, and by him presented to the sovereign.

Q. *Do not the people of Astrakan dry these STURGEONS in the sun, before the doors of their houses?*

A. Yes, and the smell of them attracts such prodigious swarms of flies into the city, that the very air seems alive with them.

Q. *Where is the CASPIAN SEA?*

A. It is a great lake in Asia ; and, besides sturgeon, it has fine salmon and herrings.

Q. *Where is* ASTRAKAN?

A. A city on the Caspian Sea ; rain seldom falls, but it is crossed by the Wolga, which overflows, and when the water retires, the grass grows in less than a month.

Q. *Where is the* HERRING-FISHERY *carried on ?*

A. Principally in the North Sea ; it has been prosecuted on the British shores from a remote period, and at one time it was the "Grand Fishery" of Holland.

Q. *Where are the chief* BRITISH HERRING-FISHERIES ?

A. At Wick, in Scotland, and Yarmouth, in Norfolk.

Q. *How are they cured ?*

A. They are salted and dried in a curing-house, by small fires made of greenwood.

Q. *Are they soon ready for use ?*

A. Those called *bloaters* are not al-

lowed to hang more than a single night; others which are to be kept longer, hang for four or five weeks.

Q. *What are PILCHARDS?*

A. They bear a close resemblance to the herring, and appear annually on the southern coasts of England and Ireland, where they are captured in large shoals.

Q. *What is done with them?*

A. They are salted with bay salt, packed in hogsheads, and exported chiefly to Italy; they are not much eaten in England.

Q. *What OIL useful in medicine is procured from fish?*

A. Cod-liver-oil; which is procured from the liver of the cod-fish.

Q. *What island is famous for its COD-FISHERY?*

A. Newfoundland; but they are now abundant on our own coasts, especially on the Dogger Bank, and off the coasts of Scotland and Cornwall.

Q. *Where is the DOGGER BANK?*

A. Off the coast of Yorkshire.

Q. *How is the COD caught?*

A. By deep-sea lines, with hooks fastened at regular distances along their whole length, by shorter cords, called *snoods*.

Q. *How are MACKEREL caught?*

A. Chiefly with drift-nets, made of small fine twine tanned of a reddish brown colour, to render them more durable.

Q. *At what season is the MACKEREL-FISHERY carried on?*

A. It commences in March on the south coast of England, but those taken in May or June are considered superior in flavour. They do not appear off the Scottish coast until later.

Q. *What is SPERMACELE?*

A. It is a white, fat substance, found in an immense cavity of the skull of the whale, distinct from the brain.

Q. *Is it not a fluid when the animal is alive?*

A. Yes; but when dead it is found in solid lumps of a whitish colour.

Q. *Is SPERMACELE found in all whales?*

A. No ; it is the oil of a particular kind of whale, known from the common whale, by having a bunch on its back.

Q. *What are the uses of SPERMACEI ?*

A. It is of great use in medicine, for coughs and inward bruises, and candles are also made of it.

Q. *What is this WHALE called ?*

A. The cachelot whale.

Q. *Where is the largest WHALE FISHERY in the world ?*

A. Off the coast of Greenland.

Q. *Which is the largest of the WHALE tribe ?*

A. The rorqual.

Q. *What is its LENGTH ?*

A. It varies from 100 to 121 feet.

Q. *Why is it less valued than the GREENLAND WHALE ?*

A. In consequence of the small amount of oil it produces, and the short length and inferior quality of the whale-bone in its mouth.

Q. *Where is the RORQUAL found ?*

A. In the Arctic Ocean.

Q. *What are the chief FRESH-WATER FISHERIES?*

A. The salmon-fishery, and the trout-fishery.

Q. *Where are the SALMON-FISHERIES?*

A. At the mouths of many of the rivers in England and Scotland. The Tweed fishery is the largest of any in Great Britain.

Q. *How are SALMON caught?*

A. By spearing them at night, when they come towards a light which is carried on purpose to decoy them.

Q. *How are TROUT caught?*

A. Usually with a rod and line, by persons called anglers, who consider it an agreeable amusement.

Q. *Why is the art of ANGLING so called?*

A. From the angular shape of the hook, originally fashioned of wood or bone, such as are still used by savage nations.

Q. *Where are LOBSTERS found?*

A. The largest fishery is off the

coast of Norway ; they are also taken off the Scilly Islands, the Orkney Islands, and the east coast of Scotland.

Q. How are they caught ?

A. By pots and cages fastened to a cord, and sunk in the sea. In summer they are found near the shore, but in winter they are seldom taken in less than twelve or fifteen fathoms of water.

Q. What is the appearance of the SHRIMP ?

A. It looks like a lobster in miniature ; it has ten feet, and its motion consists of leaps. It is in great request for table, and is frequently caught by boys who wade in the sandy shallows where they abound, pushing a sort of dredge net before them, at the end of a long pole.

Q. What are SARDINES ?

A. The real sardine is something like a small pilchard, but many of the cured fish sold as such are sprats, pilchards, or small herrings.

Q. Where is the SARDINE-FISHERY ?

A. On the Mediterranean coasts of France and Italy.

Q. *How are they CURED?*

A. By washing in salt water, removing the heads, gills, &c.

Q. *Are they then ready for use?*

A. They are again washed, dried in the sun, steeped in boiling olive oil, and packed in small tin boxes.

Q. *What are YAMS?*

A. A certain root used by the Americans for feeding their negroes.

Q. *Is it not a singular root in SHAPE?*

A. Yes; it is very large, and looks like a man's leg.

Q. *Are not YAMS sometimes boiled for food, or ground into flour?*

A. Yes.

Q. *What are DATES?*

A. A fruit shaped like a large acorn, and much eaten by the Africans and Egyptians.

Q. *Where is the DATE-TREE principally cultivated?*

A. On the African coast of the Mediterranean.

Q. *Are not the LEAVES of this tree very large?*

A. Yes; they are eight or nine feet long, and are sent to Italy under the name of palms, to be used in the grand religious procession on Palm Sunday.

Q. *Which is PALM SUNDAY?*

A. The Sunday before Easter, when the multitude cut down palm-trees, and strewed them in the path of our Lord.

Q. *What are CUCUMBERS?*

A. A cooling fruit, always eaten before they are ripe, with vinegar, oil, pepper, and salt. They are sometimes stewed.

Q. *From what country were they brought?*

A. From some part of the Levant; they are raised in hot-beds under glass in this country.

Q. *What are GHERKINS?*

A. Very young cucumbers, pickled with vinegar and spices.

Q. *What is the common MELON?*

A. A species of cucumber. In hot climates this fruit attains great perfection; in ours it is raised under glass.

Q. *What is the WATER MELON ?*

A. Another species, highly valued in hot climates for its delicious flavour and coolness. It melts in the mouth, and, like the fluid in a cocoa-nut, may be poured through a hole and drank.

Q. *What countries particularly value them ?*

A. Egypt, China, and the East Indies ; their pulp in general is of a reddish colour.

Q. *What are MANGOES ?*

A. Such as we see in this country is the unripe fruit of a large East Indian tree, pickled in vinegar.

Q. *Is it a fruit much esteemed in India ?*

A. Yes ; when ripe it is about the size of a goose's egg ; its smell is so refreshing, that it is thought it will restore persons in a declining state of health.

Q. *What are CAPSICUMS ?*

A. South American and Indian plants, known by their pods of shining

red or yellow colour, which contain many small seeds.

Q. *What are they used for?*

A. In hot climates they are eaten in large quantities in both animal and vegetable food.

Q. *What is CAYENNE PEPPER?*

A. It is made from the fruit of different species of capsicums.

Q. *What process does it undergo?*

A. When ripe it is dried in the sun, pounded, and mixed with a certain quantity of salt, then kept for use, closely stopped in bottles.

Q. *Is it considered wholesome and useful?*

A. Both; for it is much used in eating, and is strongly recommended by doctors in gouty and paralytic cases, to promote the action of the organs when languid.

Q. *What is GARLIC?*

A. A bulbous root of an offensive smell and strong flavour, much eaten by the lower classes of the French, Spaniards, and Portuguese.

Q. *What other people eat it to excess?*

A. The Jews. It is also much used in medicine, in dropsy, asthmas, agues, and all nervous disorders.

Q. *Has it not been found of use in curing DEAFNESS?*

A. Yes; by wrapping a clove of garlic in mustard, and putting it into the ear.

Q. *Is not the JUICE of GARLIC said to be a strong cement?*

A. Yes; the strongest that can be used for broken glass or china.

Q. *Where does this plant grow wild?*

A. In the island of Sicily.

Q. *What are LEEKS?*

A. A bulbous root of the garlic tribe, much used in some countries in soups, broths, &c.

Q. *What COUNTRY are they natives of?*

A. Switzerland.

Q. *What NATION wear the leek as a badge of honour?*

A. The Welsh, on the day of their patron saint, St. David.

Q. *What gave rise to this curious custom?*

A. It happened that during the Welsh wars a party of Welshmen wanted a mark of distinction, and passing through a field of leeks, they seized and stuck the plants in their caps, and under this signal they were victorious.

Q. *What are CHIVES?*

A. The smallest of the garlic tribe, the bulbs being about the size of large peas.

Q. *What is ENDIVE?*

A. A salad of a bitter taste, said to have been imported from China.

Q. *Name some of the SWEET HERBS cultivated in England?*

A. Rosemary, lavender, thyme, marjoram, and mint.

Q. *For what purpose are ROSEMARY and LAVENDER cultivated?*

A. They yield powerful essential oils when distilled with water.

Q. *What place in England is famous for its LAVENDER FIELDS?*

A. Mitcham, in Surrey.

Q. *What are TOMATOES or LOVE-APPLES?*

A. A red, juicy fruit, which grows on trailing plants, as bunches of grapes do on a vine.

Q. *For what are they used?*

A. Sauces, pickles, and preserves are prepared from them.

Q. *What is the CANADIAN or TREE ONION?*

A. It is curious from producing its onion on the top of its stalk.

Q. *What are SHALOTS?*

A. Another kind of garlic, much used by the French in cookery.

Q. *What is SOY?*

A. A dark-coloured sauce, made from the seeds of a Chinese plant.

Q. *Is there not a joke among seamen that SOY is made from beetles and cockroaches?*

A. Yes; it originates from a fancied resemblance in the colour and shape of the seeds to the beetle.

Q. Where is this esteemed SAUCE prepared?

A. Chiefly in China and Japan. That brought from the latter place is most preferred.

Q. What is the ANCHOVY?

A. A small fish of the herring tribe, made into a well-known sauce, or salted and pickled.

Q. Where are they caught?

A. In the Mediterranean; but the principal fishery is on the shores of Gorgona, a small island near Leghorn, in Italy.

Q. What is KETCHUP?

A. A well-known sauce made from the common mushroom.

Q. What are MUSHROOMS?

A. A fungus found wild in parks and pastures, where the turf has not been ploughed for many years.

Q. What are MORELLS?

A. A kind of fungus found in woods and hedges, used for thickening and heightening the flavour of sauces and soups.

Q. *How are they* PRESERVED ?

A. They are strung upon pack-thread and dried.

Q. *What is* SALOOP ?

A. A nourishing drink, sold very early in the morning in the streets of London to the poor.

Q. *What is it made of?*

A. An infusion of sassafras, mixed with milk, which is considered very nourishing.

Q. *Who value this drink highly?*

A. The Turks. What we use in this country is principally prepared and brought from the Levant.

Q. *What is* SASSAFRAS ?

A. The wood, root, and bark of a tree growing in North America, used in medicine.

Q. *Has it not a very powerful* SCENT, *disagreeable to insects?*

A. Yes ; therefore in America they make bed-posts of the wood, and put it into wardrobes to prevent moths.

Q. *What is common* SALT ?

A. A preparation extracted from sea-water.

Q. How is this done?

A. By putting sea-water into large shallow trenches ; the sun dries up the water, and the salt is found at the bottom.

Q. Is there any other kind of SALT?

A. Yes ; there is a finer sort, called rock salt, that is dug out of mines.

Q. Where are these MINES?

A. In several places ; but the most noted one is at Wieliczka, seven miles from Cracow, in Poland.

Q. Is there not something very remarkable about this MINE?

A. Yes ; it is inhabited, and there are houses, chapels, and streets of rock salt formed in it.

Q. Is it not extremely beautiful?

A. Yes ; and when illuminated it sparkles like diamonds.

Q. To whom does this MINE belong?

A. To the Emperor of Austria. It affords support to many thousands, and must be well worth viewing.

Q. Are there not also SALT SPRINGS and WELLS?

A. Yes ; there are several in England and some other European countries. The finest are in Cheshire, Worcestershire, Hampshire, and Northumberland.

Q. *Are there not also MOUNTAINS of SALT ?*

A. Yes ; there is one 500 feet high, near Cardona, fifty miles from Barcelona, in Spain ; also one in Lahore, a province in Hindostan ; and in Peru.

Q. *What is BAY-SALT ?*

A. That which is produced by the evaporation of sea-water by the heat of the sun only.

Q. *What is SALTPETRE ?*

A. It is another sort of salt found pure on the surface of the earth in some parts of India, Africa, and Spain, where it is swept off at certain seasons, twice or three times a week.

Q. *But is it not artificially made ?*

A. Yes : from the refuse of animal and vegetable substances, which undergo a state of putrefaction.

Q. *From what countries does it chiefly come ?*

A. From India, Africa, and Egypt.

Q. *Where is the process by which it is artificially produced carried on?*

A. In the East Indies ; the nitre is obtained from the earth which contains it by washing, evaporation, and crystallization. In France, Germany, and other continental countries it is produced in nitre beds by the decomposition of animal and vegetable substances.

Q. *What other name is SALTPETRE also known by?*

A. That of nitre.

Q. *What renders it of so much importance?*

A. Its being a principal ingredient in the composition of that destructive discovery called gunpowder.

Q. *What is GUNPOWDER?*

A. A mixture of nitre, sulphur, and charcoal ; but by far the largest part is nitre.

Q. *How was GUNPOWDER invented?*

A. A monk of Cologne, called Swartz, when making chemical experiments,

discovered that the above mixture, finely powdered, would produce an explosive quality.

Q. *But who discovered its great and destructive powers?*

A. Roger Bacon, who spoke of it as a potent engine in the destruction of armies.

Q. *When was it first used in battle?*

A. At Cressy, and afterwards at the siege of Calais.

Q. *Is it not said that the Chinese were acquainted with GUNPOWDER long before this period?*

A. Yes.

Q. *Has not a substitute for GUNPOWDER been more recently discovered?*

A. Yes, that of gun-cotton, which is said to be more powerful than that substance, and to ignite at a much lower temperature, to be uninjured by water, and to burn without smell or smoke.

Q. *How is it prepared?*

A. From well-cleansed cotton or other vegetable fibre immersed in a

mixture of nitric and sulphuric acids. The acid is then pressed out, and it is dried in rooms heated by hot air or steam.

Q. *To what purposes is it applied?*

A. In mining and blasting operations, and also in discharging cannon.

Q. *Who was ROGER BACON?*

A. A learned monk in the reign of Henry III. and Edward I.; he invented telescopes, reading-glasses, microscopes, and also many mathematical instruments.

Q. *Is he not also said to have made the first map?*

A. Yes, it was one of the country of Tartary; he formed it from the descriptions he obtained from some travellers.

Q. *Was he not looked upon as a magician in those ignorant days?*

A. Yes, and was thrown into prison where he was kept several years: he died a very old man at Oxford.

Q. *What is common SULPHUR, or BRIMSTONE?*

A. It is a yellow, dry substance, which in burning yields a suffocating fume.

Q. *Whence have we it?*

A. It is dug out of the earth in many places, particularly in Italy, Switzerland, and South America.

Q. *What is CHLORINE?*

A. An elastic gaseous fluid obtained from sea plants.

Q. *For what is it useful?*

A. In bleaching, it has the curious and important power of destroying the colour of animal and vegetable matter so completely that nothing can reproduce the colour it has removed. It is also valuable as a disinfectant.

Q. *What is MURIATIC ACID?*

A. A strong acid prepared from chlorine and hydrogen.

Q. *What is LABURNINE?*

A. A poisonous alkaloid found in the unripe seeds of the laburnum.

Q. *What is PYROTECHNY?*

A. It is a term applied to the art of making fireworks, and compounding combustibles.

Q. *Among whom did the art of PYROTECHNY originate?*

A. The Chinese, who are said to surpass in ingenuity of device anything that can be seen in Europe.

Q. *When were FIREWORKS introduced into Europe?*

A. They are first mentioned as being used at Florence in grand out-door ceremonies in the thirteenth century.

Q. *What are the chief substances used in the composition of FIREWORKS?*

A. Gunpowder, saltpetre, charcoal, sulphur, chlorate of potash, oxides and salts of metals, &c.

Q. *How are the tubes of PAPER and PASTEBOARD prepared?*

A. By means of rolling-boards, and rolling-tables.

Q. *What MACHINE is used to close the ends of the tubes when filled?*

A. A treadle machine.

Q. *What are PORTFIRES?*

A. Tubes filled with a composition which produces a strongly heated

flame, used to kindle some of the works.

Q. What are CRACKERS ?

A. Trains of composition folded in long strips of paper, bent, and tied up closely ; when ignited an explosion takes place at the bend.

Q. What are SQUIBS ?

A. Small tubes of cartridge paper, closed at one end, and filled with a composition of gunpowder, charcoal, sulphur, and steel filings.

Q. What are SERPENTS ?

A. Large squibs which make a hissing noise, and move in a zigzag manner.

Q. What is meant by COMPOUND FIREWORKS ?

A. Grand displays which show great variety of pyrotechnics.

Q. What are AQUATIC FIREWORKS ?

A. Those which float on water, with precautions against the wetting of the composition.

Q. When were FIRE ENGINES invented ?

A. In the reign of Charles II., by John Vander Heyden.

Q. *By whom were STEAM FIRE ENGINES invented?*

A. By Mr. Braithwaite in 1829, but they did not come into use until 1852 when a floating engine was seen on the Thames.

Q. *When were they first used by the LONDON FIRE BRIGADE?*

A. In 1861.

Q. *What is meant by the LONDON FIRE BRIGADE?*

A. A body of men established in London for the protection of the metropolis in case of fire.

Q. *Of what does the LONDON FIRE BRIGADE consist?*

A. It comprises nearly 400 firemen, about 50 stations where manual engines, steam engines, or floating engines are always in readiness; these are aided by numerous fire-escapes.

Q. *What is AQUA-FORTIS?*

A. A mixture of nitre and clay, distilled in a glass apparatus.

Q. *By what other name is it called?*

A. Nitric acid.

Q. *What is the great use of AQUA-FORTIS?*

A. All metals except gold and silver can be dissolved in it.

Q. *What great use do dyers make of it?*

A. They use it for dissolving tin, and forming with madder that beautiful scarlet colour so much admired.

Q. *Was not this great secret discovered to the English by chance?*

A. Yes: a girl at an inn wanted to dye some ribbons, and asked her lover, who worked at a manufactory, for a little scarlet dye.

Q. *What did she do with it?*

A. She put it into one of the porter pots, and having nothing better, she boiled her ribbons in it, and they came out a most brilliant colour.

Q. *Was her lover surprised when he saw it?*

A. Exceedingly so, and being a clever fellow, he imagined the tin pot had

caused it, and by this means discovered an important secret.

Q. *What is Madder ?*

A. A trailing plant, much cultivated in England and Holland on account of its roots, which are used by dyers and calico-printers.

Q. *What colour is procured from it ?*

A. A fine red colour ; and it also forms a first tint for several other shades.

Q. *What foreign countries produce it ?*

A. It grows wild in South America, and in the neighbourhood of Smyrna ; and the Island of Cyprus produces a kind which affords a very beautiful colour.

Q. *What animals are very fond of Madder ?*

A. Cows ; it makes their butter a fine yellow colour.

Q. *What are Wafers ?*

A. They are made of flour, isinglass, and a small quantity of yeast.

Q. What more is done ?

A. This mixture is coloured, spread out in very thin cakes on tin plates, dried on a stove, and cut out into wafers.

Q. What is INK ?

A. A mixture of galls, copperas, gum-arabic, and water.

Q. What are GALLS ?

A. A swelling on the leaves of the oak, occasioned by the bite of small insects, who lodge their eggs in it.

Q. By what name is this INSECT called ?

A. Cynips or gall-fly.

Q. Where do we procure most of our NUT-GALLS ?

A. From Aleppo, Smyrna and other Eastern countries.

Q. Are there not two gatherings of NUT-GALLS ?

A. Yes ; the first, which is before the fly has eaten its way out of the leaf, is called the blue-gall ; the other, which is of inferior quality, is called the white gall.

Q. *From what is RED INK made?*

A. From alum and gum coloured with a decoction of Brazil wood.

Q. *Was not the INK used by the ancients far superior to that of modern times?*

A. Yes; as may be seen by its colour in many manuscripts of antiquity.

Q. *How is INK POWDER prepared?*

A. From copperas and galls reduced to a powder.

Q. *Are GALLS useful?*

A. Yes; quantities of them are used in dyeing, and for other purposes.

Q. *What is COPPERAS?*

A. A mineral salt formed from iron and sulphuric acid, produced from the moisture of the atmosphere.

Q. *What is its colour?*

A. A bright green; it is in much request by dyers, tanners, and the manufacturers of ink.

Q. *What is GUM-ARABIC?*

A. A well-known drug, the sap of a tree which grows in Egypt, Turkey,

and in the neighbourhood of the Persian Gulf: it issues from the bark like the gum of the cherry and plum tree.

Q. *Is GUM-ARABIC a useful drug?*

A. Yes; it was formerly much used in medicine, but now it is principally in request by dyers and the manufacturers of water colours, &c.

Q. *Is it not also a useful cement?*

A. Yes: dissolved in white vinegar it makes a very delicate one for card work, &c.

Q. *But will not common vinegar answer the same purpose?*

A. Yes: and in both cases, if kept corked, it will not dry up.

Q. *What is POUNCE, or GUM SANDARAC?*

A. The gum of the common juniper; when powdered and passed through a fine sieve, it is called pounce, and used upon writing paper where it has been scratched.

Q. *What else is it of great value in?*

A. Cabinet-makers and painters use

a great quantity of it in the preparation of varnish.

Q. *What is PAPER made of?*

A. Linen and cotton rags.

Q. *What do the Chinese make it of?*

A. Silk.

Q. *Are not some coloured rags bleached white for the purpose of making common writing paper.*

A. Yes: but the superfine writing paper is made of white rags.

Q. *How is PAPER made?*

A. The rags are first sorted; the white ones make writing paper, and the coloured ones are used for the commoner sorts.

Q. *What is then done?*

A. They are carried to a mill, and put into an engine placed in clean water.

Q. *What sort of an ENGINE is it?*

A. It is an iron instrument with long sharp teeth, or knives, which, by moving round very quickly, soon tear the rags asunder, and reduce them to a pulp.

Q. *What is next done?*

A. This pulp is put into a copper of warm water, and then resembles thin starch, and moulds of the size of a sheet of paper are dipped into it.

Q. *What are these MOULDS like?*

A. A frame with a most delicately fine wire net.

Q. *What is then done?*

A. The paper is made by gently shaking this mould when dipped in the pulp, till it is as thick as it is wanted.

Q. *How do they proceed?*

A. Each sheet is then placed beneath two pieces of woollen cloth, and taken directly to be pressed, after which it is taken out and hung up separately to dry; it is then sized.

Q. *Has not this process been superseded by MACHINERY?*

A. Almost entirely so in common paper, although superfine writing paper is frequently made by hand.

Q. *How do they proceed when the pulp is ready for the MACHINE?*

A. It passes first over an endless wire gauze, and then along a felt, through a series of rollers which press out the moisture, and, on machines of the most improved construction, it is sized, dried over cylinders filled with steam, and even cut into sheets.

Q. *Is it then ready for use?*

A. It is sorted, and the defective sheets thrown out, it is then pressed, counted into quires, and tied up in reams.

Q. *Is not PAPER made very rapidly by machinery?*

A. Yes ; the largest and finest machines now made, including the drying apparatus, can turn out 2500 square yards of paper per hour.

Q. *How are PAPER HANGINGS printed?*

A. By a cylindrical machine, with sometimes as many as twenty colours, over which the paper is passed so rapidly, that one machine will print upwards of 20,000 yards per day.

Q. *What are JAPANESE PAPER HANGINGS ?*

A. They are a new method lately introduced by which the hangings are nailed against the wall to imitate the draperies of past times.

Q. *How are PAPER BOXES made ?*

A. By machinery : a coil of paper revolves on a drum, passes through printing rollers, then through paste troughs, then through folders, until at length the boxes drop finished into a basket.

Q. *What other great improvement has taken place in PAPER-MAKING ?*

A. That of bleaching rags by which white paper can be made of almost any kind.

Q. *From what other substances is PAPER made ?*

A. Brown paper is made from old canvas ropes, and other coarse refuse. Rice, barley, straw, and other vegetable fibres may also be used in the manufacture.

Q. *When was the invention of the art introduced into England ?*

A. In the reign of Edward I. ; but it was not generally made until the sixteenth century, when a paper-mill was erected at Dartford in Kent, by a German who was knighted by Queen Elizabeth.

Q. *What is PAPIER-MACHE ?*

A. It is made from paper or rags reduced to a pulp, with gum or size, pressed into moulds, and afterwards dried.

Q. *For what is it used ?*

A. For architectural ornaments, tea trays, card cases, fire screens, and a variety of articles.

Q. *What is SIZE ?*

A. A kind of glue.

Q. *How made ?*

A. From the parings which are cut from the edges of sheep skins, and also from slips of parchment ; the size made from the latter is the best.

Q. *Was PAPER known to the ancients ?*

A. Not such as we use ; the Egyp-

tians prepared a rush, called papyrus, whence the word paper is derived.

Q. *Where did this RUSH grow?*

A. Principally about the banks of the Nile, in Egypt.

Q. *Who is said to have been exposed in a basket made of these rushes?*

A. Moses ; and the inhabitants even now weave it into cloth, mattresses, ropes, &c.

Q. *What are PENS?*

A. Instruments to write with, made of iron, brass, silver, or gold ; others are made of quills, taken from the wings of ravens, turkeys, peacocks and geese.

Q. *What town is celebrated for its manufacture of STEEL PENS?*

A. Birmingham ; nearly four hundred millions are made there in the course of the year.

Q. *When were STEEL PENS first used in England.*

A. About 1830, but there have been many recent improvements.

Q. *What poor bird is stripped*

whilst alive, every year, for the sake of its quills, or large feathers in the wings?

A. The goose ; great numbers of them are kept in the fens of Lincolnshire, for this purpose.

Q. Are they not also tormented for the down, or small feathers, which grow under the wing?

A. Yes ; five times a year they undergo this painful operation, for the purpose of stuffing our beds, bolsters, and pillows.

Q. Who write with REEDS to this day?

A. The Turks, Moors, and Eastern people.

Q. What did the ancients use?

A. An iron style ; it was sharp at one end, like a needle, to write with, and at the other end blunt and broad, to scratch out with.

Q. Who has humorously remarked that the goose, the bee, and the calf, rule the world?

A. Mr. Howel ; the first furnishing

quills ; the second, wax ; and the last parchment.

Q. *By whom was the first POST-OFFICE set up in England?*

A. By Charles I. ; he appointed a post to carry letters once a week between London and Edinburgh.

Q. *Who greatly extended this benefit?*

A. Oliver Cromwell.

Q. *When was the POST-OFFICE taken into the hands of Government?*

A. In the reign of Queen Anne?

Q. *When was the UNIFORM PENNY POST established?*

A. In 1840, through the efforts of Mr. Rowland Hill, to whom a public testimonial was presented in acknowledgment of his services to the country ; he was afterwards made a Knight of the Bath.

Q. *How many ORDERS OF KNIGHTHOOD are there in the United Kingdom?*

A. Five ; the Garter, the Bath, St.

Patrick, St. Andrew, or the Thistle ; and the Order of Knights Bachelors.

Q. *Who were the* KNIGHTS TEMPLARS ?

A. They belonged to an Order established during the time of Henry I. ; they engaged to protect the pilgrims who visited the Holy Land.

Q. *Why were they so called ?*

A. Because their apartments were on the site of the Temple at Jerusalem. The Order was suppressed in the reign of Edward II.

Q. *What is* PASTEBOARD ?

A. It is formed of several sheets of paper pasted together and pressed.

Q. *Is not the manufacture of* CARDBOARD *carried on to a great extent in France ?*

A. Yes ; there are several different branches of the trade, and many of the boxes of that material are highly ornamental.

Q. *Of what does the* CARDBOARD *for* ADDRESS CARDS *consist ?*

A. Of a layer of cartridge paper between two layers of fine paper.

Q. *What is PARCHMENT?*

A. The skins of sheep and goats, prepared in a peculiar manner.

Q. *Who is said to have been the inventor?*

A. Eumenes, King of Pergamos ; but he was the improver, rather than the inventor of parchment.

Q. *Why?*

A. Because the Persians and others are said to have written all their records on skins long before Eumenes' time.

Q. *What did the ancient Romans write upon?*

A. The bark of the ash and lime-tree, which they called *liber*, hence the Latin name for book, from which is derived our English word *library*.

Q. *In what form were the BOOKS used by the ancients?*

A. They were rolls of parchment or other substances, often illuminated in a costly manner.

Q. *What were these ROLLS called ?*

A. Manuscripts.

Q. *What is VELLUM ?*

A. The skin of young calves ; it is finer, whiter, and smoother than the common parchment.

Q. *To what purpose are VELLUM and PARCHMENT principally applied ?*

A. For writing deeds upon, as being more durable than paper ; the lawyers use great quantities of it.

Q. *Where is it principally prepared ?*

A. In France.

Q. *What is SEALING-WAX ?*

A. It is made of shell-lac and rosin, melted and prepared, and coloured with vermilion, or according to fancy.

Q. *What is SHELL-LAC ?*

A. A substance left by an insect on many trees in the East Indies.

Q. *What is ROSIN ?*

A. The juice or sap of trees.

Q. *What trees furnish this SAP ?*

A. The fir and the pine ; it is when this sap is dried up that it is called rosin.

Q. *What is GUTTA-PERCHA ?*

A. A milky juice obtained from a tree, called the Isonandra.

Q. *From whence does it come ?*

A. From many of the islands south of Asia.

Q. *For what purposes is it used ?*

A. As straps, bands for steam engines, pipes for cold water and gas ; it is also manufactured into a floor-cloth called Kamptulicon.

Q. *What are the peculiar properties of GUTTA-PERCHA ?*

A. It is excessively tough, and impervious to damp ; it is very susceptible of heat ; at a temperature considerably below boiling-point of water, it becomes so soft that it may be cut and moulded into any form, with the greatest ease.

Q. *When was it introduced into England ?*

A. In 1843, by Dr. Montgomerie.

Q. *What is INDIA-RUBBER ?*

A. The dried juice of a large tree, called the syringe tree, growing in

Guinea, Quinto, Cayenne, and other parts of South America.

Q. How is it procured?

A. By cutting the tree in wet weather, which causes the juice to ooze out, of a milk-white colour.

Q. How is it converted into the state in which we use it?

A. The juice is received into moulds prepared for the purpose?

Q. What is then done?

A. These moulds are hung over smoke till quite dry, when they are broken to pieces, and the rubber is fit to use.

Q. What use do the INDIANS make of it?

A. They make flambeaux; also boots, bottles, and a kind of cloth, all of which are impenetrable to the water.

Q. What use do we make of it?

A. Principally in drawing, to efface the marks of black lead.

Q. Is not the best INDIA-RUBBER now very scarce?

A. Yes; because the gatherers of

the juice very seldom plant new trees, or take means to preserve the old.

Q. *How is INDIA-RUBBER PAINT made?*

A. By dissolving rubber in linseed-oil, and mixing it with graphite.

Q. *What are the qualities of this PAINT?*

A. It is waterproof, and anti-corrosive.

Q. *Are not pencils made from BLACK-LEAD?*

A. Black-lead pencils are made from plumbago, a mineral chiefly found at Barrowdale, in Cumberland.

Q. *By what other NAME is it known?*

A. Graphite.

Q. *Is the MINE at Barrowdale continually worked?*

A. No; it is only opened at the end of every few years, and then again closed.

Q. *For what other purposes is PLUMBAGO used?*

A. For polishing grates and stoves, to prevent them from contracting rust.

Q. *Of what are the common sort of PENCILS made?*

A. Of a coarser kind of plumbago, melted with sulphur.

Q. *What are DRAWING CRAYONS made of?*

A. The wood of a species of willow, when converted into charcoal.

Q. *How is the PENCIL made?*

A. By cutting the lead into very thin slips, and putting it between two small pieces of wood, which are glued together.

Q. *What is GLUE?*

A. It is made from the sinews of animals boiled down to a strong jelly.

Q. *How are PAINTING BRUSHES made?*

A. By fitting quills with camel's hair.

Q. *What is remarkable of the HAIR of the CAMEL?*

A. That it falls off, and is renewed every spring; it is so soft and fine, that it is manufactured into the beau-

tiful shawls so much valued from India.

Q. *What do they use for other* BRUSHES ?

A. Hogs' bristles, and they are also used by shoemakers in the place of needles.

Q. *What is* SPONGE ?

A. It is said to be formed by an animal which remains fixed in the rocks covered with sea water.

Q. *Is not the growth of* SPONGE *very rapid?*

A. Yes ; it is often found in perfection on rocks, from which only two years before it had been entirely cleared.

Q. *From whence is it generally brought?*

A. From Constantinople, the states of Barbary, and the islands in the Archipelago.

Q. *Where is* CONSTANTINOPLE ?

A. In European Turkey, of which it is the capital.

Q. *Where are the* STATES OF BARBARY ?

A. In the North of Africa.

Q. *What is SPONGE valued for?*

A. Its use in surgery and painting to wash out or soften colours.

Q. *What is CORK?*

A. The bark of a beautiful tree, which is a kind of large green oak.

Q. *Where does it GROW?*

A. In Italy, Spain, Portugal, and most of the southern countries of Europe.

Q. *Is the BARK stripped off every year?*

A. Yes; after the tree is about fifteen years old.

Q. *Is it prepared in any way?*

A. It is soaked in water and dried over a strong fire.

Q. *What use is made of CORK?*

A. Principally to stop bottles, to make floats for nets, buoys for rivers to direct vessels, for soles of shoes, and jackets to swim in.

Q. *Did not the Egyptians make their COFFINS of CORK?*

A. Yes; and lined them with re-

sinous composition, to preserve their embalmed bodies.

Q. *What is SPANISH BLACK, so much used by printers?*

A. Burnt cork ; the parings are generally sold for this purpose.

Q. *From what are COMMON CANDLES made?*

A. From tallow.

Q. *What is TALLOW?*

A. The fat of sheep and oxen.

Q. *What is done with the FAT to prepare it?*

A. It is melted in water, boiled several times, and cleared by the addition of alum.

Q. *How are MOULD CANDLES made?*

A. By pouring boiling tallow into leaden moulds, in the middle of which a cotton has been fixed.

Q. *How are COMPOSITE CANDLES made?*

A. By a peculiar process from vegetable oils, particularly cocoa-nut oil and palm oil.

Q. *How are the WICKS of the best candles formed?*

A. They are braided, and so placed in the candle as to be consumed without requiring to be snuffed.

Q. *How do they make the KITCHEN CANDLES?*

A. By tying the wicks on a long stick, and then dipping them two or three times in hot melted tallow, until the candles become of a proper size.

Q. *In which of our king's reigns were TALLOW CANDLES considered a great luxury?*

A. In Henry the Third's time; splinters of wood being then burnt in common.

Q. *Which of our early kings used to count time by CANDLES?*

A. Alfred the Great, who had candles made which were painted in rings and belts of different breadths and colours.

Q. *For what purpose?*

A. He knew by the burning of these candles when he had been employed long enough about any one thing.

Q. *Did this clever invention quite answer his purpose.*

A. No ; for he found when the wind blew upon them, they burnt quicker, and this led him to contrive lanterns to put them in.

Q. *How are RUSH-LIGHTS made?*

A. In the same manner as kitchen candles, only the wicks are made of dried peeled rushes.

Q. *How are the SHORT CANDLES called NIGHT-LIGHTS made?*

A. By pouring melted fat into cardboard boxes, which have a provision for passing a wick and its metallic support up the middle of each candle.

Q. *Is there not a tree called the TAL-LOW-TREE ?*

A. It is a native of China ; the fruit of this tree is enclosed in a husk like that of the chestnut, and consists of three white kernels.

Q. *How do the Chinese prepare CANDLES from these?*

A. They melt the kernels, and add a little oil, and colour them with ver-

million ; they are better than our tallow candles, but inferior to wax.

Q. *How do they form the WICK ?*

A. Of little strips of dry wood, with the pith of a rush entwined round them.

Q. *How are WAX CANDLES made ?*

A. Of melted wax instead of tallow, and they have a flaxen wick which never wants snuffing.

Q. *What are TAPERS ?*

A. They are wax candles, made of different sizes, burnt at funeral processions, and other church solemnities.

Q. *At whose tomb were TAPERS kept burning, day and night, for nearly 100 years ?*

A. At Henry the Fifth's, but all these customs were abolished at the Reformation.

Q. *What is WAX ?*

A. It is a substance of which the bee forms its comb, of a yellow colour, like honey.

Q. *How do the bees manufacture the WAX ?*

A. By mixing a sort of saliva with

the honey which they deposit in the little rings that run round their bodies.

Q. *How are the cracks of the cells filled up?*

A. With a sort of gum called *propolis*.

Q. *What is the signification of the word PRO-POLIS?*

A. It is derived from the Greek, and means *before the city*, as indicating its use in the superficial part of the hive.

Q. *How do the bees obtain this GUM?*

A. They gather it from the leaf-buds of the poplar, alder, birch, and willow trees.

Q. *What is a place called where bees are kept in hives?*

A. An apiary.

Q. *What is WHITE WAX?*

A. It is prepared by melting bees' wax in water, and bleaching it in the sun and air.

Q. *Is WHITE WAX used for other purposes besides making candles?*

A. It is used in the preparation of ointments, and by artists in making wax flowers and fruits.

Q. *What is* VEGETABLE WAX ?

A. It is the produce of a palm ; there are two species from which it is obtained, one is found upon the Andez, in New Granada, the other grows in the Brazils, where the banks of some of the rivers are covered with it.

Q. *How is it procured?*

A. The young leaves of the tree are cut off and allowed to dry in the shade, when a number of light-coloured scales fall from their surface.

Q. *What is then done with the* SCALES ?

A. They are melted into white wax ; but its excessive brittleness prevents it from being used alone, but mixed with bees-wax it makes excellent candles.

Q. *What is* FLAX ?

A. The produce of a beautiful grass-like annual plant, with slender stalks, small leaves, and blue blossoms.

Q. *What is its* USE ?

A. To weave into linen for shirts, sheets, cambric, and many other things.

Q. How is it procured?

A. It is sown in March and April; when ripe it is pulled up by the roots, steeped in water, and by the fermentation which takes place, the bark or flaxy substance becomes separated.

Q. Is it necessary to do anything else?

A. Yes; these threads must be properly dressed and spun, according to the purposes for which they are to be used, then woven into linen, after which it must be bleached.

Q. What is BLEACHING?

A. The method of making linen white, by exposing it to the sun and air, as, when it comes from the weaver's hands, it is of the colour of flax, which is of a light brown.

Q. How is this operation performed?

A. It is first steeped in bran and water, then well washed and spread on the grass to dry.

Q. What is next done?

A. Bucketsful of water, mixed with a strong ley made of wood ashes,

are constantly thrown over it, and the washing and spreading to dry must be often repeated.

Q. *Is it not often steeped in BUTTERMILK ?*

A. Yes ; after which it must be well rinsed, and frequently washed in soap and water, when it becomes delicately white.

Q. *Has not a more expeditious mode of BLEACHING been discovered ?*

A. Yes ; it is now performed by a chemical process.

Q. *Can you describe this PROCESS ?*

A. The material is first boiled in pure water, and afterwards soaked in a solution of chloride of lime, for the purpose of removing the colouring matter.

Q. *What is next done ?*

A. A strong ley is made of soda, in which the fabric is again boiled, it is then washed and dried by being passed over hot cylinders.

Q. *Is not the new process far less expensive ?*

A. Yes ; for being performed with such rapidity, a yard of cloth is completely bleached for a halfpenny.

Q. *What place is noted for BLEACHING FINE LINEN ?*

A. Coleraine, a large town in Ireland, in the county of Londonderry.

Q. *To what country are we indebted for this valuable PLANT ?*

A. It is supposed it came from those parts of Egypt annually inundated by the Nile.

Q. *Which of the British Isles is famous for its LINEN ?*

A. Ireland ; a colony of Scots, in the reign of James I., fled from persecution in their own country, and settled at Coleraine, in Londonderry.

Q. *Is it not the principal MANUFACTURE of that country ?*

A. Yes ; and flax is cultivated there with great care and success.

Q. *Is not IRISH CLOTH used for body linen by all who can afford it ?*

A. Yes ; it is made of flax, and called Irish linen ; and the towns of Belfast,

Carrickfergus, and Londonderry, in the North of Ireland, manufacture this article in great perfection.

Q. *What is GAUZE?*

A. A thin transparent stuff made of thread or silk ; it is striped and figured, and forms a delicate article for trimmings.

Q. *What is CAMBRIC?*

A. The finest of all cloth made of flax ; it takes its name from Cambray, where it was first manufactured.

Q. *Where is CAMBRAY?*

A. A fortified town of France, on the Scheldt, which divides it into two parts ; in its old cathedral, the celebrated Fénélon, who wrote Telemachus, is buried.

Q. *What is LAWN?*

A. A thinner sort of cambric.

Q. *What is DAMASK?*

A. A beautiful silk or linen, with large flowers wrought or worked into patterns upon it, invented at Damascus, in Syria, from which place it derives its name.

Q. *What places now excel in this MANUFACTURE?*

A. Tournay in Belgium, and Châlons in Champagne; and it has of late years been brought to wonderful perfection in this country.

Q. *Is DAMASCUS famous for anything else?*

A. Yes: for a very fine kind of steel, used chiefly for sword blades, which will bend nearly double without snapping, this is called being of *fine temper*; also for its roses, and damson plums.

Q. *What is DAMASKEEING?*

A. Cutting the steel into different figures, and filling them up with gold and silver wire, done for adorning sword-blades, locks of pistols, &c.

Q. *What is HEMP?*

A. The fibrous parts of the stalks of a most useful plant, something like the common nettle.

Q. *What is its USE?*

A. The finer parts, after being prepared like flax, are spun into thread, and woven into canvas and strong cloth.

Q. *What do they do with the rest?*

A. It is made into twine, ropes, cables, and cordage of every description.

Q. *Is it used for anything else?*

A. Yes, the refuse is called tow, or gun-tow; it was formerly used for lighting matches for cannon, and stopping blood from wounds in battle.

Q. *For what is HEMP-SEED used?*

A. For feeding singing-birds.

Q. *What country carries on a great commerce in HEMP?*

A. Russia; but it is cultivated in Suffolk and Norfolk.

Q. *What is JUTE?*

A. The fibres of an Indian plant used as a substitute for flax and hemp.

Q. *In what town of Scotland is the MANUFACTURE of this material carried on?*

A. Dundee, where ships from Calcutta, laden with 1000 to 2000 tons of jute each, are continually arriving, many of them via the Suez Canal.

Q. *What is CHINESE GRASS?*

A. A vegetable fibre used as a sub-

stitute for cotton, wool, flax, hemp, &c.

Q. *What is COTTON ?*

A. A downy substance contained in a pod, which, when ripe, bursts, and the snow-white or yellowish contents are collected.

Q. *Where does this PLANT grow ?*

A. The very finest comes from America and the East and the West Indies ; it is raised annually from seed, and grows to a considerable height.

Q. *But is it not much CULTIVATED in Europe ?*

A. Yes : in Candia, Lemnos, Cyprus, Malta, Sicily, and Naples ; also at Jerusalem and Damascus.

Q. *How is it sown ?*

A. On ploughed lands, in spring, and is cut down like corn in harvest time.

Q. *Are there not COTTON TREES ?*

A. Yes ; two sorts grow in Egypt, and arrive at a great size.

Q. *What ARTICLES are made of this useful PLANT ?*

A. Calicoes and muslins, dimities, and many other stuffs.

Q. *How is COTTON imported into England?*

A. In large bales containing about three hundred pounds each.

Q. *In what part of England are the great COTTON MANUFACTORIES?*

A. The metropolis of the cotton trade is Manchester, but there are also extensive works in other towns of Lancashire, Cheshire, Yorkshire, and Derbyshire.

Q. *What calamity befell the COTTON DISTRICTS in 1862?*

A. The event known as the "cotton famine," which was produced in consequence of the American civil war.

Q. *What was the RESULT of that war?*

A. The liberation of the slaves employed on the cotton plantations in the Southern States of America in 1865.

Q. *What foreign countries are largely supplied with COTTON GOODS from England?*

A. Germany, China, the East Indies, America, Russia, Holland, and Belgium.

Q. *Are not the GOODS packed differently for different nations?*

A. Yes ; the manner of transport used in the interior of the countries for which they are intended must always be considered in the packing.

Q. *Describe the process by which COTTON is manufactured into CALICO.*

A. It passes through the several operations of mixing, scutching, carding, drawing, slubbing, roving, and spinning. It is then woven into cloth by the loom.

Q. *How many kinds of LOOMS are there?*

A. Two ; the hand-loom, and the power-loom which is worked by steam.

Q. *Why are LOOMS so called?*

A. From Sir Thomas Lombe, who brought them into this country from Holland in 1676.

Q. *Who may be considered the FOUNDER of the COTTON MANUFACTURE ?*

A. Sir Richard Arkwright, the inventor of the spinning-frame ; hand-labour was thereby dispensed with, as the machine was worked by horse-power.

Q. *What other MACHINES have much improved the manufacture ?*

A. The invention of the "spinning jenny," by James Hargreaves, a poor weaver ; and the "mule," by Mr. Crompton.

Q. *Is the CALICO fit for use when it is woven ?*

A. No ; it must be bleached, stiffened with flour, and pressed and glazed ; if required to receive a pattern it must be dyed and printed.

Q. *How are CALICO and MUSLIN printed ?*

A. The design is engraved on a copper roller, which is fed with colour from a vat ; sometimes several of these rollers are applied in succession. The superfluous colour is removed with a knife.

Q. *By what PROCESS are white spots made on a coloured ground ?*

A. The cloth is placed between leaden plates with holes into which bleaching powder is poured, which discharges the colour from the parts under the holes.

Q. *What is MUSLIN ?*

A. A fine thin transparent texture, made wholly of cotton.

Q. *Where did this beautiful MANUFACTURE originally come from ?*

A. The East Indies, chiefly from Bengal ; and Dacca, in that province, has long been famous for a superior sort.

Q. *Are the East India MUSLINS as much valued as they used to be ?*

A. No ; for they are now made equally fine at Glasgow and Paisley.

Q. *Where are these TWO TOWNS ?*

A. In Renfrew, in Scotland.

Q. *What is CRAPE ?*

A. A thin stuff, loosely woven, invented at Bologna, in Italy.

Q. *What is CAMELOT ?*

A. A stuff made chiefly of goats' hair.

Q. *What is SILK ?*

A. The production of a caterpillar, produced from the eggs of a moth, called the silk-worm.

Q. *How are these little creatures MANAGED ?*

A. Each moth lays about two hundred eggs ; they are placed in houses in the midst of mulberry-trees, and are watched night and day.

Q. *Is not the SILK-WORM a most curious insect ?*

A. Yes : from a little egg comes a small worm, which is fed with mulberry leaves, chopped very fine, for about thirty days, when it is full grown and becomes a large white worm.

Q. *What does it do then ?*

A. It ceases to eat : it is then furnished with little bushes of heath or broom, on which it begins to form its silken ball.

Q. *What next takes place ?*

A. On the third day it is hidden from sight, and on the tenth the work is finished.

Q. *What are these BALLS now called?*

A. Cocoons, and the worm in this state is called a chrysalis.

Q. *What do they do with the BALL now?*

A. They wind off the silk directly, or the worm would spoil it in trying to quit it.

Q. *Pray is the WORM killed?*

A. No: it is changed into a dark brown grub, which is again changed into a white moth.

Q. *Does this curious INSECT undergo any other change?*

A. No other: it only lays eggs for worms the next year, and then in a very short time dies.

Q. *What PLACES are noted for these INSECTS?*

A. China, the East Indies, the Levant, several parts of Italy, and the south of Spain.

Q. *Is not the MOREA celebrated for the culture of SILK-WORMS?*

A. Yes: the Morea was so named from "Morus," a mulberry-tree, great

numbers of them growing there for the support of silk-worms.

Q. *Do not MULBERRY-TREES often bear two crops of leaves in a year?*

A. Yes ; and in very warm climates they produce foliage all the year round, thus permitting the artificial breeders of silk-worms to obtain several crops of silk in a year.

Q. *Where was the first MULBERRY-TREE planted in England?*

A. At Sion House, the seat of the Duke of Northumberland.

Q. *Pray to whom are the moderns indebted for this curious invention?*

A. To the inhabitants of the isle of Cos, in the Archipelago.

Q. *From whence did they procure it?*

A. From Serica, where the worm was a native ; but it was long before the Romans would believe silk to be the work of a worm.

Q. *Where was SERICA?*

A. It was a country of Asia, we are told, between the Ganges and the

Eastern Ocean, generally thought to mean China.

Q. *Was not SILK very scarce for many ages?*

A. Yes: it was sold for its weight in gold.

Q. *What Roman emperor refused his empress a robe of PURPLE SILK, on account of its enormous expense?*

A. The Emperor Aurelian.

Q. *When did the SILK MANUFACTURE first take root in FRANCE?*

A. In the reign of Francis I.

Q. *When was it first known in England?*

A. In 1585, when the persecutions of the Duke of Parma drove a great number of the manufacturers of Antwerp to seek refuge in our land.

Q. *What event greatly increased the number of SILK-WEAVERS in ENGLAND?*

A. The revocation of the Edict of Nantes by Louis XIV. in 1685, when about 50,000 Huguenots fled to this country, many of whom settled in

Spitalfields, which is still famous for its silks.

Q. Where was our first SILK-MILL erected?

A. On a swampy island in the River Derwent, at Derby. It was five stories in height, and an eighth of a mile in length.

Q. By whom was this MILL set up?

A. By Sir Thomas Lombe, about 1725.

Q. How did he obtain his knowledge of the MACHINERY?

A. From his brother, John Lombe, who visited Italy, and disguising himself as a common workman obtained access to the secret works in that country.

Q. Did the ITALIANS discover his plot?

A. Yes; and with great difficulty he escaped to England, but he had noted down everything he had seen, and drawn sketches of parts of the machinery.

Q. *How many* SILK MANUFACTORIES *are now in Great Britain?*

A. Above three hundred, which employ at least a million hands. The most noted are at Spitalfields and Bethnal Green, London; Manchester in Lancashire, Macclesfield in Cheshire, and Paisley in Scotland.

Q. *How are* FIGURED SILKS *woven?*

A. By means of the Jacquard loom, a clever but complicated invention. The process is however much simplified by the aid of electricity.

Q. *What English king wore the first pair of knit* SILK STOCKINGS?

A. Henry II.; the invention of them came from Spain; but they were not heard of again till the reigns of Henry VIII. and Edward VI.

Q. *Who presented Edward VI. with a pair?*

A. Sir Thomas Gresham, and they were much thought of.

Q. *Who first wore tight* SILK-STOCKINGS?

A. Catherine de Medicis; she was

very vain of the symmetry of her hands and feet, and amidst all her cares, her toilet took up much of her time and thoughts.

Q. *Was not her DRESS very graceful?*

A. Yes, and she was a great huntress and introduced the use of the side-saddle.

Q. *What story is told of JAMES I. whilst King of Scotland?*

A. He borrowed of the Earl of Mar a pair of silk stockings, to receive the English ambassador, observing, "For ye would not, sure, that your king should appear as a scrub before strangers."

Q. *How did he like them?*

A. So well, that it is said he danced them into holes.

Q. *What did Queen Elizabeth think of SILK-STOCKINGS?*

A. In the third year of her reign, she was furnished by her silk woman with a pair, which she admired, "as marvellous delicate wear," and she would never after use cloth ones.

Q. *Was not this queen very fond of*
DRESS?

A. Yes; it is said that after her death, three thousand different habits were found in her wardrobe.

Q. *Were not some of her ROBES emblematical?*

A. Yes; the lining of one of them was worked with eyes and ears, and on her arm a serpent was embroidered with pearls and rubies, holding a great ruby in its mouth.

Q. *What were all these symbols to denote?*

A. "Vigilance and Wisdom."

Q. *Were not the RUFFS of the ladies tremendous during Elizabeth's reign?*

A. Yes; we are told that persons used to stand, by order of the queen, at the gates of the city, for the purpose of cutting down every ruff that was more than a yard in depth.

Q. *How long did this ugly fashion last?*

A. Only till the middle of the reign of James I., when a Mrs. Turner (an

accomplice in poisoning Sir Thomas Overbury) being hanged in one, put them completely out of fashion.

Q. *Is the use of the FAN very ancient?*

A. Yes; the custom was borrowed from the East, where the hot climate renders the use of fans and umbrellas indispensable, to keep off the sun and flies.

Q. *Of what MATERIALS are they made there?*

A. Principally of feathers; the most elegant are the peacock's.

Q. *Were not the FANS very singular in the time of Queen Mary?*

A. Yes; the ladies carried fans with handles a yard long, and often used them to correct their children and servants.

Q. *Who introduced PAPER-FANS into England?*

A. The Jesuits, from China and Japan in the sixteenth century.

Q. *Who are the JESUITS?*

A. A religious order founded by

Ignatius Loyola, an officer in the Spanish army.

Q. *What is VELVET?*

A. A rich kind of stuff or silk, covered on the outside with a close, short, fine shag, the inside being a very strong thick tissue.

Q. *How is this SHAG or VELVETING made?*

A. It is formed of parts of the threads of the warp, which the workman puts over a long narrow channelled ruler or needle, which he afterwards cuts.

Q. *How does he contrive to do this?*

A. By drawing a sharp steel tool along the channel of the needle to the ends of the warp.

Q. *Where are the principal and best MANUFACTORIES of VELVET?*

A. In France and Italy, particularly in Venice, Milan, Florence, Genoa, and Lucca.

Q. *What is PLUSH?*

A. A kind of velvet, but with a longer pile.

Q. For what is it used?

A. For covering men's hats.

Q. Where is PLUSH for covering hats woven?

A. In Lancashire ; but the French can weave it much finer than the Lancashire weavers.

Q. What do you mean by WEAVING, or a WEB?

A. It is a texture formed of threads, interwoven with each other ; some of them are extended in length, and called the warp ; and the others which are drawn across, are called the woof, or weft.

Q. How do they form PATTERNS in WEAVING?

A. By throwing the woof, not over every other thread of the warp, but allowing two, three, or many more threads of the warp, to remain unbound, by shooting the woof under them, and thus forming a pattern.

Q. What place is noted for the WEAVING of RIBBONS?

A. Coventry, in Warwickshire.

Q. Whence are RIBBONS imported into England?

A. Those made of silk or satin chiefly come from France; those of other materials mostly come from Belgium.

Q. What is LACE?

A. A work composed of many fine threads, interwoven by means of a number of bobbins, made of bone or ivory, each of which contains a small quantity of fine thread.

Q. How is the PATTERN of the LACE formed?

A. The pattern is drawn upon a piece of stiff parchment pricked full of holes, and pins being stuck into these holes, or openings, the threads are twisted round them, and the pattern formed.

Q. What places in England are particularly famous for this MANUFACTURE?

A. Honiton in Devonshire, and some towns of Derbyshire and Nottinghamshire.

Q. What foreign places have been long famous for rich costly LACE?

A. Brussels, Antwerp, and Mechlin in Belgium, and Valenciennes in France.

Q. *Where is SILK LACE manufactured?*

A. At Nottingham, where it is made by machinery.

Q. *What is POINT LACE?*

A. It is seldom seen now; it is all worked stitch by stitch with the needle.

Q. *When was POINT LACE first seen?*

A. About the end of the fourteenth century.

Q. *What class of people were skilled in this art?*

A. The nuns, by whom it was worked for the adornment of churches and the vestments of priests.

Q. *Who introduced the art of LACE-MAKING into France?*

A. Colbert, minister to Louis XIV., who established it at Alençon, where it is produced in the highest perfection to this day

Q. *Of what is MALTESE LACE made?*

A. Of Barcelona silk, but it is now produced in Buckinghamshire of as good quality as in Malta.

Q. *What is TAPESTRY?*

A. A very curious kind of hangings, used many years ago to adorn and line the walls of a chamber.

Q. *What was it composed of?*

A. Wool and silk ; frequently raised and enriched with gold and silver, representing figures of men, animals, landscapes, &c.

Q. *Who are supposed to have been the FIRST MANUFACTURERS of this beautiful and costly article?*

A. The English and the Flemish, who are thought to have learnt the art in one of their crusades or expeditions against the Saracens.

Q. *Did they not imitate by this work the paintings of the best masters?*

A. Yes : and tapestry became one of the finest ornaments of palaces and churches.

Q. *What eminent PAINTER executed*

some of his most renowned works as designs for TAPESTRY ?

A. Raphael ; the tapestry for which they were intended was made for the decoration of the Sistine Chapel at Rome.

Q. What were these beautiful works of art called ?

A. Cartoons : several of them are now in the South Kensington Museum.

Q. Is there not a curious piece of TAPESTRY preserved at Caen, in Normandy ?

A. Yes : it is said to be the work of Matilda, daughter of Henry the First.

Q. What does it represent ?

A. The Conquest of England ; the faces are supposed to be portraits.

Q. Is this MANUFACTORY still encouraged ?

A. No ; the Gobelines, near Paris, is the only one remaining in Europe, where it is carried to such perfection, that the colouring and beauty of the

pieces are equal to the fine paintings from which they are copied.

Q. *When was the GOBELIN TAPESTRY introduced into France?*

A. In the reign of Francis I.; one of its greatest excellences consists in the beauty of its scarlet dye.

Q. *How was this DYE discovered?*

A. Gobelin procured it from a man at Leghorn, whose father discovered it by chance.

Q. *By what means?*

A. He had a phial of aqua regia standing in the window framed with tin, in which was some extract of cochineal; a piece of the tin being loose, fell into the phial of aqua regia, and changed its colour to a beautiful brilliant scarlet.

Q. *Was the TIN imagined to have this extraordinary effect upon the COCHINEAL?*

A. Yes: and by many experiments it was found to be the chief agent in this chemical change.

Q. *What is WOOL?*

A. The curled hair or covering of sheep.

Q. *How is it prepared?*

A. It is first scoured and washed, then dried in the shade, well beaten, and every little bit of dirt picked out.

Q. *What is next done?*

A. It is oiled, combed, and spun on a wheel; then sized or stiffened a little, when it is fit for weaving into cloth.

Q. *Is the CLOTH now fit for use?*

A. No; after it is woven, it is washed with soap and water several times, and dried between each washing.

Q. *Is it not fit now to make into CLOTH for COATS?*

A. No: it must still be dyed, brushed, and pressed.

Q. *Whence have we the best WOOL?*

A. From Australia, India, and the Cape of Good Hope; we also receive a little from Spain and Saxony, but England has long been famous for wool.

Q. *Where is AUSTRALIA?*

A. It is the largest island in the world, and lies to the south of Asia, between the Indian and Pacific Oceans. It was discovered in 1606, and is now one of the British colonies.

Q. *Where are the chief seats of the WOOLLEN MANUFACTURE in England?*

A. At Leeds, Huddersfield, Bradford, Halifax, and Wakefield, in Yorkshire; Bradford, Chippenham, and Trowbridge, in Wiltshire, and Stroud in Gloucestershire.

Q. *What are the chief WOOLLEN MANUFACTURES?*

A. Broadcloths, baizes, kerseymeres, serges, flannels, stuffs, reps, twills, moreens, &c.

Q. *What CLOTHS are made partly of WOOL and partly of COTTON?*

A. Alpacas, paramattas, and coburg cloth.

Q. *Is not ALPACA made of a peculiar kind of WOOL?*

A. Yes; the animal from which it is procured is a species of llama, found

in Peru and other parts of South America. The wool is of a fine silky texture.

Q. *What are POPLINS ?*

A. They are made partly of wool, and partly of silk ; they are chiefly manufactured in Ireland.

Q. *What is WOOLLEN YARN called ?*

A. Worsted, from the name of a village near Norwich where it was first spun.

Q. *What are TARTANS ?*

A. Variegated cloths made of worsted, much worn by the Highlanders.

Q. *Where are BLANKETS chiefly manufactured ?*

A. At Witney, in Oxfordshire.

Q. *When were they first made in England ?*

A. In the reign of Edward III. ; Thomas Blanket of Bristol established looms for weaving those useful articles.

Q. *What is BUNTING ?*

A. The woollen stuff of which flags are made.

Q. *What is the NATIONAL FLAG of Great Britain called?*

A. The Union Jack.

Q. *When was it so called?*

A. In 1801, when the Irish parliament was united to that of England.

Q. *How did it obtain the name of a JACK?*

A. It was so called by the sailors from Jacques, the name of King James I. subscribed on it.

Q. *What English sovereigns gave great encouragement to the manufacturing of WOOL?*

A. Edward III. and Queen Elizabeth. They received the poor people from the Netherlands, and allowed them to establish large manufactories at Norwich, &c.

Q. *What is MERINO WOOL?*

A. The wool of a famous Spanish breed of sheep, of which the very finest cloths are made.

Q. *What is LEATHER?*

A. It is made of the skin of different animals.

Q. *How?*

A. First, the hair is taken off, by steeping it in lime-water, and then scraping it clean with a knife.

Q. *What else must be done?*

A. It is stretched in a pit, then covered with tan or oak-bark, and the pit filled with water.

Q. *Is it now FINISHED?*

A. No: it is greased, waxed, blacked, and dyed.

Q. *What skins are TANNED with oak-bark?*

A. Those of the horse, ox, buffalo, calf, and other strong hides.

Q. *What use is made of those LEATHERS?*

A. They are made into the soles of shoes, harness, saddles, &c.

Q. *From what countries do we obtain OX and COW HIDES.*

A. Monte Video, Buenos Ayres, Russia, and some parts of Germany.

Q. *Where are MONTE VIDEO and BUENOS AYRES ?*

A. In South America ?

Q. *Do we not also obtain HORSE-HIDES from South America ?*

A. Yes, from the pampas, which are enormous plains to the south of Buenos Ayres.

Q. *Are these hides TANNED before being sent to England ?*

A. No ; they are dried and preserved in salt.

Q. *What substance besides OAK-BARK is used for TANNING ?*

A. Sumach powder.

Q. *What is MOROCCO LEATHER ?*

A. The skin of goats, dressed, tanned, and dyed in a peculiar manner, invented in Morocco, whence it has its name.

Q. *Is not this LEATHER beautifully made in London ?*

A. Yes.

Q. *Why are GOAT-SKINS used ?*

A. Because they take the dye better,

and produce richer and more brilliant colours.

Q. *Where is MOROCCO ?*

A. A large country in Barbary.

Q. *Does not the country called BARBARY include several kingdoms ?*

A. Yes; the northern coast of Africa, extending along the sea-shore of the Mediterranean, is so called ; it is near 2000 miles in length.

Q. *By what names are the several kingdoms known ?*

A. Barca, Tripoli, Tunis, Algiers, Fez, and Morocco.

Q. *How did the ancients call this country of Barbary ?*

A. By the name of Mauritania, Numidia, and Lydia.

Q. *What is ROAN ?*

A. It is imitation morocco leather, made of lamb-skins.

Q. *What is it used for ?*

A. For furniture, book-binding, carriage-linings, &c.

Q. *How is RUSSIAN LEATHER prepared ?*

A. It is first steeped in alkaline lye, and then tanned with birch bark, from which it receives a peculiar odour.

Q. *What is the usual colour of* RUSSIA LEATHER ?

A. A pale orange colour ; it is much valued because moths and other insects will never touch it.

Q. *What use is made of* HOG-SKINS ?

A. They make a strong sort of leather used for saddles, but they are never tanned on account of their greasy nature.

Q. *How is white leather* DRESSED ?

A. The skins are soaked in a vessel with a mixture of alum and salt, and afterwards dressed with a paste made of flour and the yolks of eggs.

Q. *What is* WASH-LEATHER ?

A. Sheep-skins soaked in water, and then dressed in oil without tanning.

Q. *How is the* OIL *forced into the* skins ?

A. By a machine worked by steam.

Q. *Where are the largest* TAN-YARDS *in* England ?

A. In a suburb of London called Bermondsey.

Q. *What is CHAMOIS LEATHER ?*

A. A warm pliable leather dressed in oil, or tanned, and much valued for its softness, and being capable of bearing soap.

Q. *What sort of animal is the CHAMOIS ?*

A. A kind of antelope, about the size of a goat ; these animals inhabit mountainous places, particularly the Alps and Pyrenees.

Q. *Is it not a dangerous pursuit to hunt them ?*

A. Yes ; for they go in large companies, and take fright at the least noise, and can spring at a single leap, up rocks more than twenty feet high.

Q. *What is TANNING ?*

A. The art of converting the raw skins of animals into leather.

Q. *What is BUCK-SKIN, or DOE-SKIN ?*

A. The hide of the buck, or male

deer, manufactured into breeches and gloves, on account of its softness.

Q. *What is the* DOE?

A. The female deer: its young one is called a fawn.

Q. *What is a* HAT?

A. A covering for the head, made of wool and hair mixed curiously together, by means of beating, pressing, boiling, and soaking.

Q. *Of the* HAIR *of what animals are* MEN'S HATS *made?*

A. The finest and most valued are made of the pure hair of an animal called the castor, or beaver.

Q. *What sort of an animal is this?*

A. An amphibious one, remarkable for its art, address, and contrivance in building its habitation.

Q. *What country is it a native of?*

A. Canada, and other provinces of North America.

Q. *What do you mean by* AMPHIBIOUS?

A. Being able to live both upon

land and in the water, like frogs, tortoises, otters, &c.

Q. *What other animals afford HAIR fit for making hats?*

A. The rabbit, hare, and goat; their fur or skin, on this account, is very valuable.

Q. *Is not the HAIR of these animals mixed with much WOOL?*

A. Yes: they are entangled together, pressed, and beaten into a sort of cloth, of which the hat is made.

Q. *What is the CLOTH called.*

A. Felt; a little of the real beaver hair is added to the outside to make it very soft and glossy; but silk hats are now more worn.

Q. *How is the body of the HAT made?*

A. Of cotton cloth, or felted wool, moulded round blocks of the required shape.

Q. *How is it STIFFENED?*

A. By means of a varnish composed of resin and other gums.

Q. *How are the HATS made of such a beautiful black?*

A. By dyeing, which is done by boiling them in logwood, and afterward dipping them into a mixture of copperas and vitriol.

Q. *How are STRAW HATS made?*

A. The straw of wheat or rye is cut at the joints; the outer skin being removed, it is split by means of a very simple instrument, and then plaited.

Q. *What English counties are famous for the manufacture of STRAW HATS?*

A. Hertford, Bedford, and Buckingham.

Q. *What did men and women wear before HATS were invented?*

A. Hoods of various colours, and close-knit woollen caps.

Q. *Who is said to have introduced the fashion of wearing HATS?*

A. Charles VII. of France; he made his public entry into Rouen, in 1449, wearing a hat lined with red velvet,

and ornamented with a plume of feathers.

Q. *May the use of HATS and CAPS be dated from this time?*

A. Certainly ; for they soon became general. Charles VII. of France lived in the reign of our Henry VI.

Q. *What shape were the HATS worn at this period?*

A. Some were steeple-crowned ; others were flat and broad ; and others had round crowns, with bands of all colours.

Q. *How were they ORNAMENTED ?*

A. With huge feathers and brooches or clasps, and jewels of great value.

Q. *What are GLOVES ?*

A. A covering for the hands and arms.

Q. *From the skins of what animals are LEATHER GLOVES made ?*

A. From the kid, lamb, doe, and elk.

Q. *How is leather prepared for making GLOVES ?*

A. It is tawed instead of tanned.

Q. *What is TAWING ?*

A. Preparing the leather with alum, which renders it soft and pliant.

Q. *What is a KID ?*

A. A young goat.

Q. *What is a LAMB ?*

A. A young sheep.

Q. *What is a DOE ?*

A. The female of a rabbit, as well as of a deer, is called a doe ; but it is of the skin of the former gloves are made.

Q. *What is an ELK ?*

A. A large kind of deer, the size of a horse ; it inhabits Europe, America, and Asia, and feeds on twigs and branches of trees.

Q. *Is it a gentle creature ?*

A. Yes ; except when teased by the gad-fly ; it travels at the rate of fifty miles a day, in a kind of shambling trot.

Q. *Where are GLOVES principally made ?*

A. At Worcester, London, Hereford, Hexham, and Woodstock : Limerick, in Ireland, is famous for them.

Q. *Where is* HEXHAM ?

A. In Northumberland, formerly celebrated for the forest where queen Margaret met the robber.

Q. *Where is* WOODSTOCK ?

A. In Oxfordshire.

Q. *When were* GLOVES *first worn in* England?

A. Highly ornamental gloves appear to have been used by kings and the higher church dignitaries in the twelfth century, and gradually from that period they became a portion of ordinary dress.

Q. *What is meant by the* GAUNTLET?

A. It was a glove of jointed steel plates, which was worn of old by knights in armour.

Q. *What use did they principally make of it?*

A. To throw it down to any one who had offended them, as a sign that they were to fight till one was slain, or confessed himself vanquished.

Q. *What are* STOCKINGS ?

A. Coverings for the feet and legs.

Q. Of what were they first made?

A. Of cloth, or of stuffs sewed together.

Q. Who invented the art of WEAVING STOCKINGS IN A FRAME?

A. William Lee, a native of Woodborough, near Nottingham, in 1589, in the reign of Queen Elizabeth.

Q. Was he not very ill-treated for his ingenious invention?

A. Yes; the stocking-knitters, fearing it would spoil their trade, drove him away.

Q. What became of him?

A. He died of grief, but his invention did not die with him.

Q. What places are noted for our manufacture of COTTON STOCKINGS?

A. Nottingham, and Aberdeen in Scotland.

Q. Of what different materials have SHOES been made?

A. Of raw skins, rushes, broom, paper, flax, silk, wood, iron, silver, and gold; they are now usually made of leather, stuff, and silk.

Q. *Have not their shape, colour, and ornament, been very various ?*

A. Yes ; they have been square, high, low, long, cut, and curved.

Q. *What distinguishing ORNAMENT did the PATRICIANS, among the Romans, wear in their SHOES ?*

A. An ivory crescent ; and Isaiah speaks of the moons which the Jewish women wore in their shoes.

Q. *What did the EGYPTIANS use for SHOES ?*

A. The bark of the papyrus, a rush growing on the banks of the river Nile.

Q. *What is the custom of the TURKS when they enter their MOSQUE ?*

A. They always put off their shoes and leave them at the door.

Q. *How were SHOES adorned in England in the reign of Edward the Fourth ?*

A. With long peaks turning upwards from the toe, and fastened by silver chains or laces to the knees.

Q. How long did these pointed SHOES last?

A. Till near the reign of Richard III.; though few fashions have ever been attacked with more violence, as laws were made, and even the clergy preached against them.

Q. Did not a contrary extreme become the fashion?

A. Yes; and in a few years all the fine gentlemen looked as if they had got the gout, for they wore cloth and velvet shoes, so very broad that their feet looked like great platters.

Q. Was there not another law now obliged to be made?

A. Yes; forbidding any shoe to be more than six inches across the toes.

Q. Of what is the UPPER LEATHER of men's shoes usually made?

A. Of calf-skin; ladies' shoes are made of kid, morocco, jean, satin, and velvet.

Q. Was not the DRESS in the reigns of Edward IV. and his brother Richard III. very ridiculous?

A. Yes ; it was so tight they resembled stuffed figures more than living men ; their shoulders were stuffed out to make them look broad, and the waist was pinched in as tight as it could be borne.

Q. *Were not the sleeves to this DRESS enormously long ?*

A. Yes ; they were worn hanging from the elbow such a length, that Edward IV. used to tie his behind his back to avoid tumbling over them.

Q. *Are not the BEEF-EATERS, as they are called, still in the same dress of the time of Henry VIII. ?*

A. Yes ; the style of dress was then very showy, and because the king was so fat, the courtiers stuffed out their clothes to make them look as big as he did.

Q. *Were not the SLEEVES to this dress ridiculously tight ?*

A. Yes ; it is said that some of the beaux had them sewed up every time they put them on.

Q. From what arose the name of BEEF-EATERS?

A. It is a very strange corruption of a very plain word, "buffetier," a person who waits at a buffet or side-board, as our butlers do now.

Q. Where are these entertaining accounts to be met with?

A. In Mrs. Markham's clever History of England.

Q. What are PINS made of?

A. Brass, drawn out into wire, which, when the pin is finished, is whitened.

Q. Does not a PIN, before it is fit to use, pass through the hands of many workmen?

A. Yes ; a great many workmen are employed upon each pin, between the drawing of the brass wire, and the sticking of the pin in the paper.

Q. How does this happen?

A. When the wire is drawn fine enough, it must be made straight ; then cut into proper lengths, afterwards sharpened at the points, then the head

is put on ; and lastly, it is whitened and polished.

Q. When were PINS first used and made ?

A. They were invented in France, in 1543, in the reign of Henry VIII. ; before this art was discovered, the ladies used small skewers made of wood, bone, and ivory.

Q. Were they not considered a great luxury, and not fit for common use ?

A. Yes ; the maker was not allowed to sell them in an open shop, except on two days in the year, at the beginning of January.

Q. What old custom did this give rise to ?

A. To husbands giving their wives money at the beginning of the year, to buy a few pins ; therefore, money allowed to a wife for her own private spending, is even now called "pin-money."

Q. Where is there a great MANUFACTURE OF PINS ?

A. At Gloucester.

Q. *What are NEEDLES ?*

A. A needle is a small instrument made of steel, very pointed at one end, and pierced at the other for the thread.

Q. *What STEEL makes the best NEEDLES ?*

A. The German and Hungarian steel.

Q. *When were NEEDLES first made in England ?*

A. In the reign of Queen Mary, by a negro from Spain ; but as he would never tell the secret, it was lost at his death.

Q. *When was this useful art recovered ?*

A. In the reign of Queen Elizabeth, when Elias Growse, a German, taught the art to the English, who have since brought it to perfection.

Q. *By whom were SEWING MACHINES invented ?*

A. A poor mechanic named Walter Hunt invented a machine with two

needles in 1834, but it never came into use until a new invention was made by Elias Howe, an American artisan in 1845.

Q. Are there not many kinds of these MACHINES now in use?

A. The manufacture of them is enormous; the small machines are worked by hand, others by hand and foot-treadles, and the largest, for manufacturing purposes, by steam-power.

Q. Can all kinds of NEEDLE-WORK be performed by them?

A. They usually comprise sewing, seaming, hemming, felling, basting, tucking, frilling, braiding, and sometimes embroidery.

Q. By whom were THIMBLES invented?

A. By the Dutch; they were introduced into this country, from Holland, by a mechanic, who set up a workshop at Islington in the reign of William III.

Q. *How are COMMON THIMBLES made?*

A. Thin sheet iron is cut into strips the size required; these are passed through a punching press, which cuts them into a circular form.

Q. *What is next done?*

A. These little discs are made red hot and hollowed; they are afterwards polished, and sometimes gilt inside by inserting a cone of gold leaf, which is affixed by strong pressure.

Q. *What is CAT-GUT?*

A. This is a name given to small strings for violins, and other instruments, formerly made from the skins of the intestines of cats.

Q. *But what is now chiefly used?*

A. The intestines of sheep or lambs, dried and twisted, either singly, or several together.

Q. *What places are famous for making it?*

A. Lyons, in France; Italy, and Germany.

Q. *Who invented MUSICAL NOTES?*

A. Guido Aretine, an Italian monk, in the reign of Henry I.; he formed the musical scale we now use, an invention which he thought "atoned for all his sins."

Q. *Name the most ancient MUSICAL INSTRUMENTS.*

A. The harp and the organ, which are mentioned in the book of Genesis, the oldest history extant.

Q. *When do we first hear of MUSIC among the Jews?*

A. In the time of Moses; the priests were obliged to cultivate the art for the service of the tabernacle.

Q. *Do we find traces of MUSIC among other ancient nations?*

A. The profession was hereditary amongst the Egyptians, who played upon the lyre, flute, and cymbals; among the Greeks we hear of Theodorus, a great flute player; and the Roman soldiers are reported to have sung hymns before the triumphal car of Romulus.

Q. *Who made a collection of sacred*

melodies for use among the early Christians?

A. Pope Gregory the Great; amongst them was the Gregorian Chant; which is still in existence.

Q. *What kind of instrument is the ORGAN?*

A. It consists of a number of pipes, of different lengths, each of which when blown into emits a musical sound.

Q. *How are the PIPES blown into?*

A. By a large pair of bellows, worked by a man behind the organ; the pipes are opened to admit the wind by means of keys, like those of a piano.

Q. *What are MUSICAL GLASSES?*

A. An arranged set of glasses, which vibrate when they are struck, and set in motion the sound-waves of the air.

Q. *What is an EOLIAN HARP?*

A. An instrument made with strings and exposed to the wind, which striking against them produces harmonious sounds.

Q. *What is WHALEBONE?*

A. A sort of gristle found inside the

whale, in thin, long, flat pieces, three or four yards long; it supplies the place of teeth.

Q. Are there not 400 or 500 of them in one WHALE?

A. Yes; they stick to the upper jaw, and form a kind of strainer to keep in the sea-snails, which they live upon.

Q. What is WHALEBONE used for?

A. To stiffen stays, umbrellas, and whips.

Q. When were UMBRELLAS first seen in England?

A. In 1750; James Hanway, the philanthropist, was the first man who was bold enough to carry one in the streets of London, where he was subjected to many insults and annoyances. It was not till about thirty years after that the umbrella trade found favour with the English.

Q. In what countries were they first used?

A. In many Eastern countries; they were brought hither from Italy.

Q. *Where are UMBRELLAS of gigantic size used?*

A. In West Africa ; they are sometimes made of rich damask edged with gold fringe, and are frequently twenty-five feet in diameter.

Q. *How are WHIPS made?*

A. Several slips of whalebone are put together, each piece growing smaller towards the point ; they are bound together by a sort of network woven round them.

Q. *What is the LASH made of?*

A. A piece of whip-cord ; and its length and quality depend upon the purpose it is to be used for.

Q. *What place is famous for WHIPS?*

A. Daventry, in Northamptonshire.

Q. *What is a CABLE?*

A. A strong thick rope made of hemp, fastened to a ship's anchor.

Q. *What are its uses?*

A. To hold ships firm at anchor, and to tow vessels in large rivers. Every great ship has three cables.

Q. *At what place in England are they principally MANUFACTURED ?*

A. At Deptford, in Kent.

Q. *What is a TELESCOPE ?*

A. It is an optical instrument of many glasses, which brings objects at a great distance close to our view.

Q. *What is meant by OPTICAL ?*

A. Relating to the science which treats of light and colours, and the construction of instruments for assisting vision.

Q. *How is this SCIENCE usually divided ?*

A. Into Catoptrics, the doctrine of reflected light ; Dioptrics, which treats of refracted light ; and Chromatics, the doctrine of colours.

Q. *What are LENSES ?*

A. Glasses so formed as to make the rays of light magnify or diminish objects viewed through them.

Q. *Are there not several kinds of TELESCOPES ?*

A. There are three ; namely reflecting, refracting, and achromatic.

Q. Which of these TELESCOPES is used for astronomical purposes?

A. The achromatic, which does not colour the objects viewed at the edge.

Q. What is a PRISM?

A. A glass body used for separating rays of light, in their passage through it.

Q. Who has the honour of the invention of the TELESCOPE?

A. This is not exactly known; but Galileo was the first who brought it to any degree of perfection.

Q. Who was he?

A. An Italian born at Florence, in Italy.

Q. What did he become from great study, and the constant use of his glasses?

A. Quite blind.

Q. Who has since brought the TELESCOPE to the greatest perfection?

A. Sir Willian Herschel, by which he discovered the planet Uranus; but that constructed by the late Earl of Rosse is still more magnificent; it is

the largest reflector in the world, being six feet in diameter.

Q. *By whom has a gigantic refracting TELESCOPE been constructed?*

A. By Messrs. Cook and Sons, English opticians of great eminence. The object glass is twenty-five inches in diameter.

Q. *What is an OBSERVATORY?*

A. A building fitted up for astronomical observations.

Q. *Where are the most celebrated OBSERVATORIES?*

A. At Greenwich and Paris.

Q. *What is an ORRERY?*

A. A machine for representing on a small scale the motions of the heavenly bodies.

Q. *What is a MICROSCOPE?*

A. An instrument which magnifies the smallest objects, so as to render them clear to the sight.

Q. *What is a BAROMETER?*

A. An instrument for telling the changes in the weather, by means of the variations in the state of the air.

Q. *What is a THERMOMETER ?*

A. An instrument for measuring the degree of heat or cold, by the rising or falling of the mercury.

Q. *What is an HYGROMETER ?*

A. An instrument which indicates the state of the atmosphere.

Q. *What is an ANEMOMETER ?*

A. An instrument for measuring the wind.

Q. *What is the CAMERA OBSCURA ?*

A. A machine by which objects reflected through a double convex glass are exhibited on a white space beneath the surface.

Q. *Are not the objects represented in an inverted form ?*

A. Yes ; but by placing the lens in a tube within the box, and a piece of ground glass in the lid they appear in their proper position.

Q. *In what art is the CAMERA OBSCURA extremely useful ?*

A. In that of Photography.

Q. *What is PHOTOGRAPHY ?*

A. The method by which pictures

or impressions of objects can be produced by the action of light.

Q. *What is the signification of the term PHOTOGRAPHY?*

A. It is derived from two Greek words *photos* light, and *grapho* to write or draw.

Q. *By whom was the art of DRAWING by the action of light invented?*

A. By Daguerre, a Frenchman; it was first called daguerreotyping, but has been almost entirely superseded by the more modern photographic process.

Q. *Describe this wonderful process?*

A. A plate coated with silver is placed in the box, where it is exposed to the vapour of nitric acid; upon the light being admitted a reflection of the portrait is taken, which is acted upon by the vapour of mercury.

Q. *When the PICTURE becomes fixed what is it called?*

A. The negative, which is the reverse of the original; from this any number of copies can be printed.

Q. *What important use was made of this art during the siege of Paris?*

A. In the preparation of letters for the carrier-pigeon post, which was almost the only means of communication during that eventful period.

Q. *How were these MESSAGES prepared?*

A. A large sheet covered with the printed news was placed before a camera, a copy of which was taken upon a film of about two inches square, which was neatly coiled up, and enclosed in a very small quill, tied securely to the tail of a pigeon, which was then let loose.

Q. *What is a CLOCK?*

A. A machine for measuring time, regulated by the uniform motion of a pendulum.

Q. *What is a PENDULUM?*

A. A heavy weight which swings backwards and forwards, so that one tooth of the wheel which makes a tick, escapes every time that the pendulum moves.

Q. *What is the difference between a CLOCK and a WATCH ?*

A. A watch cannot have a pendulum, because it would not go unless kept upright ; it is therefore moved by a spring instead of a weight.

Q. *How then is its motion governed ?*

A. By a balance instead of a pendulum ; the balance is a small wheel.

Q. *When were CLOCKS first introduced into England ?*

A. About 1368, when Edward III. allowed three artists from Delft, in Holland, to practise their occupation in this country.

Q. *Where were the two first CLOCKS placed, that were known in England ?*

A. One over the gateway at Westminster, and the other at Canterbury, in the time of Henry III.

Q. *When were POCKET WATCHES first brought into England ?*

A. About the year 1577, in the reign of Elizabeth ; they were invented at Nuremberg in Franconia, in Germany.

Q. *What is CHINA-WARE or PORCELAIN made of?*

A. A hard rocky stone, of the nature of flint, ground to a fine powder, mixed with a sort of clay which is quite soft.

Q. *Does not the beauty of the CHINA depend upon the mixing of these materials?*

A. Yes ; for making the finest sort they put half and half of each.

Q. *How is it made into the many shapes we see it in?*

A. It is mixed into a fine paste, well kneaded with the hands, after which it is moulded into shapes, then painted, gilded, and, lastly, baked in a furnace.

Q. *But is it not partially baked before it is painted, &c.?*

A. Yes ; in which state it is called biscuit.

Q. *What do they use in England for the making of CHINA?*

A. A kind of clay and ground flint.

Q. *How are the patterns engraved upon CHINA ?*

A. The design is engraved on copper-plate, and printed on a thin unsized yellow paper which is laid on the ware.

Q. *What is next done ?*

A. The article is rubbed with a sponge, and then set aside to allow the pattern to become fixed. It is next dipped in water to separate the paper, and the pattern remains perfect.

Q. *What is the next PROCESS ?*

A. It is glazed with a mixture of flint and soda, and is then ready for the furnace.

Q. *What is the difference between CHINA and other POTTERY WARES ?*

A. It is partly transparent, having in it some of the ingredients used in the manufacture of glass.

Q. *Why is it called CHINA-WARE ?*

A. Because the first brought into Europe came from China, and the Chinese still excel in this manufacture.

Q. *What is the word PORCELAIN supposed to be derived from?*

A. The Portuguese word *porceluna*, which means a *cup*, because the Portuguese were the first who traded to China, and the chief articles they brought over were cups.

Q. *Is there not a famous PAGODA at Nankin, which has a coat of china all over it?*

A. Yes; and it gives it a delicate and beautiful appearance.

Q. *Has England any occasion now to go abroad for this beautiful WARE?*

A. No; our own manufacturers at Derby, and Worcester, Staffordshire, and Bristol, surpass most others in taste, elegance, and beauty.

Q. *Is there not a beautiful WARE made in France?*

A. Yes; it is called Sèvres China, and is very expensive, as well as that made at Dresden, in Saxony.

Q. *What is TERRA COTTA?*

A. It is an Italian word that means literally baked clay. The name is

applied to many valuable relics of art that have been found in Italy and other places.

Q. *Is not old SÈVRES CHINA eagerly sought after in the present day?*

A. So much so that a pair of vases with covers and stands forming jardinières have been known to fetch 6500 guineas.

Q. *What was the size of those magnificent VASES?*

A. They measured eleven and a half inches in height. They belonged to the late Duchess of Cleveland.

Q. *What is GLASS?*

A. A mixture made by melting flint, sand, and alkali, in a very hot furnace.

Q. *What is ALKALI, or KALI?*

A. A kind of salt, found in the ashes of burnt vegetables.

Q. *How did man become acquainted with the beautiful discovery of GLASS?*

A. Accident made it known to some merchants in Syria, who were shipwrecked on that shore.

Q. *How?*

A. Finding plenty of the plant kali, they used it for making a fire on the ground, and the ashes mixing with the sand, produced this beautiful substance.

Q. *When was the art of MAKING GLASS first known in England?*

A. In the time of the Heptarchy ; it was introduced by a monk named Benedict.

Q. *How is GLASS made into so many curious forms?*

A. By blowing ; and when first made warm can be cut by a pair of scissors or shears.

Q. *How are PATTERNS formed upon GLASS ?*

A. By cutting or grinding on a wheel with wet sand.

Q. *Are not these curious shapes all baked?*

A. Yes, or they would fall to pieces, this process is called annealing.

Q. *When were DRINKING GLASSES made in England?*

A. In Queen Mary's time ; and they were at first considered more precious than silver.

Q. *Were LOOKING-GLASSES common at that time.*

A. No ; there were a few used at the toilet, but they were very small ; the ladies usually carried them in their pockets, or hung them to their girdles.

Q. *Of what GLASS are LOOKING-GLASSES made ?*

A. Of plate glass.

Q. *How is PLATE GLASS made ?*

A. It is run out in a liquid state into cast iron plates ; as it cools a metallic roller is passed over its surface.

Q. *How is GLASS coloured ?*

A. By a mixture of various metals ; cobalt is used for blue, oxide of iron for green, silver for bright yellow, gold for ruby, &c.

Q. *By whom was the art of STAINING GLASS discovered ?*

A. The art is ascribed to a painter

of Marseilles, who went to Rome during the pontificate of Julius II. ; it was afterwards greatly improved by Albert Durer.

Q. Were there no COLOURED WINDOWS in our cathedrals before that period?

A. Yes ; but the pictures were merely painted on the surface, and were consequently liable to be rubbed off.

Q. When were GLASS WINDOWS used in England?

A. Not till the year 1100, about the time of William Rufus, and they were considered as a mark of great magnificence, suitable only to palaces, churches, &c.

Q. Where were the first GLASS WINDOWS put that were ever seen in England?

A. At Hexham Abbey, in Northumberland ; they were made by some workmen who came from France, and who taught the English, but it was long before they became common.

Q. *What nation first used this beautiful substance for WINDOWS ?*

A. The Italians ; in a short time the French learned to make it, and from them the art travelled into England.

Q. *When were GLASS WINDOWS first used in dwelling houses in England ?*

A. In the reign of Queen Elizabeth ; they were made at Crutched Friars in London.

Q. *What kind of GLASS is commonly used for WINDOWS ?*

A. Crown glass which is made of kelp, and fine white sand.

Q. *What is FLINT GLASS composed of ?*

A. Lynn sand, red lead, and refined pearl-ash.

Q. *Is not broken GLASS frequently utilized ?*

A. Yes ; it is melted down, and made into common bottles.

Q. *What towns in England are celebrated for their GLASS MANUFACTORIES ?*

A. Newcastle and Bristol.

Q. *What city was long famed for the fineness of its GLASSES ?*

A. Venice. The first important glass manufactory was established at Murano, near that city.

Q. *Where is VENICE ?*

A. In Italy, a rich and celebrated city, built on seventy-two little islands.

Q. *Were not HORN and OILED PAPER used as substitutes for GLASS in WINDOWS ?*

A. Yes : the horn was heated till quite a jelly, when it became thin and transparent, sufficient to keep out cold, and admit light ; at present it is useful for common lanterns.

Q. *What is HORN ?*

A. A substance growing on the heads of various animals, serving them as weapons, both of offence and defence.

Q. *Are they of any great use ?*

A. Yes ; for when strongly heated or soaked in boiling water, they become very soft, and may be pressed

into moulds of various forms such as handles for knives, forks, &c.

Q. *What other substitute has been used for GLASS ?*

A. Talc.

Q. *What is TALC ?*

A. A semi-transparent mineral, composed of silica, magnesia, and lime.

Q. *Where is it found ?*

A. In some parts of Scotland, and largely in India and Ceylon.

Q. *By what other name is this mineral called ?*

A. Mica.

Q. *What is KELP ?*

A. Burnt sea-weed : the making of kelp affords employment to many industrious families in Scotland and the Orkneys.

Q. *Where are the ORKNEY ISLANDS ?*

A. A cluster of small islands to the north of Scotland.

Q. *What is HORSE-HAIR ?*

A. The hair of the mane and tail of the horse.

Q. *What is it useful for ?*

A. That of the mane is used for stuffing mattresses, chair bottoms, saddles, and horse-collars.

Q. *And what is the HAIR in the tail used for ?*

A. It is woven into a kind of cloth, for covering chairs and sofas, and for making fishing-lines, sieves, and the bows of musical instruments.

Q. *What is a CARPET ?*

A. A covering for the floor, either worked with a needle, or woven in a loom.

Q. *What kind of LOOM is used for WEAVING CARPETS ?*

A. The Jacquard loom.

Q. *What Eastern countries have been noted for their CARPETS ?*

A. Persia and Turkey ; some of the former are exquisitely beautiful.

Q. *How are these beautiful patterns FORMED ?*

A. The workman has a painting traced in its proper colours tied before him, which is divided into little squares

by which he knows how many stitches he is to use of one colour.

Q. *What is the difference between a KIDDERMINSTER and a BRUSSELS CARPET?*

A. Brussels carpeting is made by passing the threads over a wire, which is afterwards drawn out, leaving a row of loops.

Q. *What are the WILTON CARPETS?*

A. They are made like the Brussels carpeting, only the loops are cut before the wires are drawn out.

Q. *Are they not very handsome?*

A. They look like rich velvet.

Q. *What is peculiar of the AXMINSTER CARPET?*

A. They are woven without a seam to any pattern, and are exceedingly beautiful and expensive.

Q. *Were CARPETS used by the ancients?*

A. Yes: they are mentioned in the Bible, as used by persons who dwelt in tents.

Q. *But when were they used in England?*

A. It is uncertain ; so late as the twelfth century, it was considered an article of great luxury to have the floors covered even with clean straw.

Q. *Is not this mentioned as an instance of the haughty Becket's splendid style of* LIVING ?

A. Yes ; his sumptuous apartments were every day in winter strewn with clean straw or hay, and in summer with green rushes.

Q. *Why ?*

A. That the gentlemen who paid court to him, and who could not find a place at his table, might not soil their fine clothes by sitting on a dirty floor.

Q. *Where are the largest* CARPET WORKS *in the world ?*

A. At Halifax, in Yorkshire.

Q. *What towns of Scotland are noted for their* CARPET MANUFACTORIES ?

A. Edinburgh and Glasgow.

Q. *What other places in England are famous for* CARPETS ?

A. Axminster, Wilton, Stockport, and Kidderminster; the art was brought to London in 1750, in the reign of George II., by two men, who quitted France in disgust.

Q. *What is DYEING?*

A. The art of staining silk, cloth, or linen of various colours, by the mixture of different materials, and by means of chemical processes.

Q. *How many COLOURS are there that cannot be made by any mixture?*

A. Three, red, blue, and yellow cannot be made; but they serve, added with a variety of other things, to form every other shade in colours.

Q. *Name the chief YELLOW DYES obtained from the vegetable kingdom.*

A. Annatto, dyer's broom, fustic, saw-wort, Persian berries, quercitron bark, turmeric, weld, and willow leaves.

Q. *Name the chief YELLOW DYES obtained from the mineral kingdom.*

A. Chromate of lead, oxide of iron,

sulphurate of antimony, sulphurate of arsenic, and a few others.

Q. What colour will BLUE and YELLOW make?

A. Green ; and if blue and red are mixed they will produce purple ; and red and yellow will form orange.

Q. Is the art of DYEING of very great antiquity?

A. Yes ; it was known in the earliest ages of the Jews, and by the Babylonians and the Egyptians.

Q. Was it not equally well known in Hindoostan, Ceylon, and China?

A. Yes, and carried by them to the greatest perfection ; and when Mexico was discovered, the art of dyeing or painting was equally well known to them.

Q. How was this proved?

A. By their sending information of the arrival of the Spanish squadron on their coast, to Montezuma, by means of painting exact representations of their ships on cloth.

Q. Did they not by means of this

kind of PICTURE WRITING, keep their records, histories, and calendars?

A. Yes; they represented things that had bodily shapes, in their proper figures and colours; and those that had none, by some characters well understood.

Q. *What city of Egypt was celebrated for the richness of its purple DYE, so much valued by the ancients?*

A. Babylon, at no great distance from Cairo; they obtained it from a shell fish, called murex, or the purple fish.

Q. *Are there many different species of this FISH.*

A. Yes; and it is thought by this they obtained the three beautiful colours, called rose-purple, violet-purple, and hyacinth-purple.

Q. *What different materials are used to obtain COLOURS?*

A. Some are obtained from woods, as Brazil wood affords red; logwood, purple; woad and indigo, blue dyes; and the saffron flower, yellow.

Q. *What is* INDIGO ?

A. A beautiful blue dye, prepared from the fluid or pulp of an annual plant, which is cultivated with great care in the East and West Indies, America, and Asia.

Q. *What is* STONE-BLUE, *used by* laundresses ?

A. It is a preparation of indigo.

Q. *What is* LOGWOOD ?

A. A dark red wood, chiefly used in dyeing, and brought from Honduras and some of the West India Islands.

Q. *Where does it chiefly grow ?*

A. In forests where the soil is moist, or near the banks of rivers and lakes.

Q. *What is* WOAD ?

A. A plant which grows wild in Cambridgeshire, Somersetshire, and Durham; the leaves are picked, ground, and reduced to a pulp, and formed into little balls, and exposed to the sun to dry.

Q. *Is not this plant believed to be the same used by the Britons, to stain and paint their bodies with ?*

A. Yes.

Q. *What dye produces the brilliant colours of MAGENTA and MAUVE ?*

A. Anthracine, which is a preparation from coal tar.

Q. *What is VERDITER ?*

A. It is prepared from copper ; it is a blue dye, or, mixed with yellow, forms green.

Q. *What is FUSTIC ?*

A. A wood brought from the Caribbean islands ; it is used for dyeing yellow.

Q. *What is SUMACH ?*

A. It is also a yellow dye, obtained from the leaves of a tree growing in Spain, Sicily, and Syria.

Q. *How is CRIMSON obtained ?*

A. From a little worm of the same species as the cochineal insect, which abounds in Spain and the South of France.

Q. *Was not this dye much used by the ANCIENTS ?*

A. Yes ; it was called by the

Phœnicians, Tola, and by the Greeks, Coccus.

Q. Must not every substance be prepared before it receives the COLOUR?

A. Yes, or it would wash out; it is called the mordant; alum is good for linens and cottons, and solutions from metals for silk and wool.

Q. Must it then be dipped in this MORDANT first?

A. Yes, and well dried before it is put into the colouring liquor.

Q. What great good does this MORDANT effect?

A. It firmly fixes the colour, and gives it greater brilliancy.

Q. What is ALUM?

A. A very valuable salt, obtained from ores, or from earths, containing sulphur or clay, dug out for this purpose.

Q. What part of the world has the merit of this useful discovery?

A. The East; but since the reign of Queen Elizabeth, it has been prepared and made in Europe.

Q. *Why is it reckoned so very valuable?*

A. Because it is used in so many manufactures, in dyeing, and tanning, also in preparing paints, in making candles to harden them, in making paper, by wine merchants to fine their wine, and by bakers to whiten bread.

Q. *What is the earth called in which ALUM is found?*

A. Shale.

Q. *How is the ALUM separated from the other matters with which it is mixed?*

A. The shale is roasted, and then spread on the bottoms of large shallow pits, and water is allowed to flow into the pits and cover the shale.

Q. *What then takes place?*

A. The alum is dissolved in the water.

Q. *How is the water again separated from the ALUM?*

A. By evaporation. It is afterwards transferred to large coolers, where the process of crystallization takes place.

Q. *Where were the first ALUM-WORKS set up in England?*

A. In the north-east of Yorkshire.

Q. *Do not some INSECTS yield a fine dye?*

A. Yes; both cochineal and gum-lac.

Q. *What is COCHINEAL?*

A. A very beautiful scarlet dye, produced from small insects about the size of a small pea, which are only found in Mexico and New Spain.

Q. *How are they procured?*

A. The cochineal insects adhere in great numbers, in a torpid state, to the leaves of a prickly pear; at a certain time of the year they are carefully picked or brushed off by an instrument in the form of a pen.

Q. *Is not this a very tedious operation?*

A. Yes; the persons employed in it are sometimes obliged to sit for hours beside a single plant.

Q. *How does the COCHINEAL appear in this country?*

A. In the form of a reddish shrivelled grain, covered with a white bloom or

powder ; the male has wings, the female not.

Q. *Will COCHINEAL of itself produce such a brilliant COLOUR ?*

A. No ; it gave at first only a dull crimson colour, until a chemist, of the name of Kuster, discovered the art of preparing it with a solution of tin.

Q. *What is CARMINE ?*

A. The deepest artificial red colour prepared from cochineal.

Q. *What is GUM-LAC ?*

A. A resinous colouring substance like wax, produced by a species of ant, a native of the East Indies. The best lac is of a deep red colour.

Q. *Where do these insects abound ?*

A. They are found upon trees on both sides of the river Ganges, in India ; the only trouble in getting them is to break down the branches of the trees and carry them to market.

Q. *Are SEED-LAC and SHEL-LAC the produce of the same insects as GUM-LAC ?*

A. Yes ; gum-lac is the substance

in its natural state, seed-lac when boiled in water, and shellac when it has been melted ; it is much used in painting, dyeing, sealing-wax, and varnish.

Q. *What is the LAC called when made into small cakes for sale ?*

A. Lac-dye.

Q. *Is not another DYE made from LAC ?*

A. That called lac-lake.

Q. *How is it used for LACQUERING ?*

A. It is dissolved in alcohol, and coloured.

Q. *What is ALCOHOL ?*

A. The spirit of beer or wine produced by fermentation, and separated by distillation.

Q. *What is VARNISH ?*

A. A compound of gum, mixed with spirits of wine, and other ingredients, laid upon wood, metal, and other bodies to make them shine ; also used for setting a gloss upon cabinets, pictures, &c.

Q. *What is the fine BLACK VARNISH so much used in China and Japan?*

A. It is supposed to be the resinous juice of the cashew-nut tree; whatever it touches it stains of a deep black colour.

Q. *What is JAPANNING?*

A. The art of varnishing and painting ornaments on wood, metals, leather, and paper, prepared for the purpose.

Q. *Why is it called JAPAN?*

A. Because the first pieces of this ware, which were brought to England, came from Japan and China.

Q. *Where is JAPAN?*

A. In Asia; it is a large country, composed of nearly four thousand islands in the North Pacific Ocean, very rich in gold, and noted for many curious customs.

Q. *Mention some of these?*

A. Our common drinks are used cold, but theirs are all hot; we uncover the head out of respect, and they the feet; we are fond of white teeth, and they of black; we get on horse-

back on the left side, and they on the right ; they write from top to bottom, from right to left in perpendicular lines.

Q. Are they not very peculiar in their domestic habits ?

A. Yes ; they are extremely simple, and require very little furniture in their houses ; they do not sit like Europeans, but rest on mats with their legs doubled up, looking as if they had been amputated at the knees ; they do not require beds, as they sleep on mats without even a pillow.

Q. What is the Emperor called ?

A. The Mikado, he has the supreme dignity and resides at Miaco in Nippon, but the affairs of the state are conducted by his lieutenant-general the Tycoon, who resides at Yeddo in a fortified palace.

Q. Do not the NOBLES exercise great power ?

A. They are called Daimios, and live in a kind of feudal state.

Q. *When did JAPAN first become known to the English?*

A. In the time of Elizabeth, but in the succeeding reign all the ports were closed against Europeans.

Q. *When was it again opened?*

A. In 1858 a commercial treaty was effected by Lord Elgin between England and Japan.

Q. *What do the Japanese principally trade in?*

A. Gold, silver, cabinets, and other japan and lacquered wares. Their carvings in ivory of figures and animals are very beautiful.

Q. *But do not the French, and especially the English, imitate this art of JAPANNING so well, as to render the trade now of little consequence?*

A. Yes; Pontypool, Birmingham, and London are famous for their tea-trays, dressing-boxes, cabinets, and snuff-boxes.

Q. *What is PAINT?*

A. A mixture of oil and colours, so various, according to the style of paint-

ing designed, that it is impossible to describe them.

Q. *Who invented painting in OIL COLOURS ?*

A. John Van Eyk, in Edward the Third's time ; he discovered, accidentally, that his colours mixed better with oil than with water, and he excelled in producing a rich colouring.

Q. *How are OIL PAINTINGS usually executed ?*

A. On canvas stretched on a frame.

Q. *In what manner are colours for OIL PAINTINGS prepared ?*

A. They are ground, and prepared with very fine oil ; they are ordinarily purchased by painters in bladder-bags, in a state ready for use.

Q. *Whose OIL PAINTINGS are the earliest known to us ?*

A. Mabuse and Holbein's. Henry VIII. patronized the latter, and once said to a nobleman who was irritated against him, "I can, when I please, make seven lords of seven ploughmen,

but I cannot make one Holbein even of seven lords."

Q. *What is* FRESCO PAINTING ?

A. The art of painting on fresh plaster, or on a wall laid with mortar not yet dry, and with water colours.

Q. *Are not* FRESCO PAINTINGS *of great antiquity ?*

A. Specimens have been found in Herculaneum and Egypt ; although thousands of years old, they still retain their brilliant colouring.

Q. *What is the meaning of* PAINTING *on enamel ?*

A. It signifies the laying on of mineral colours upon gold, silver, copper, &c.

Q. *What is* MEZZOTINTO ?

A. A particular manner of engraving, by representing figures on copper, so as to form prints, in imitation of painting in Indian ink.

Q. *Who invented it ?*

A. Prince Rupert usually has the credit, but it is supposed he learned the secret from a Colonel de Siegan,

and brought it to England in the reign of Charles the Second.

Q. *Who was SIEGAN ?*

A. An officer in the service of the Landgrave of Hesse.

Q. *Who excel in this method of ENGRAVING ?*

A. The English.

Q. *What is GILDING ?*

A. Gold laid on any surface by the way of ornament.

Q. *How is this wonderful operation performed ?*

A. A bar of gold is made red hot, and beaten till it becomes as thin as paper ; it is then divided into equal square pieces, and again forged or heated.

Q. *What other process is necessary ?*

A. These squares are interlaid with leaves of vellum, and the gold beaten with the heaviest hammer, till it is stretched to the extent of the vellum.

Q. *What follows ?*

A. These pieces of vellum are now crossed with leaves made of the gut of

an ox, properly prepared, five inches square, and the gold is again beaten, till it is stretched to the size of the pieces of skin.

Q. Is this the whole of the operation?

A. Yes : nothing remains but cutting the edges even, and fixing the leaves of gold in books, the paper of which is well smoothed and prepared, that they may not stick to them.

Q. Is the GOLD-BEATER'S SKIN, which is used for healing cuts, the same which you have just mentioned, as prepared from the gut of an ox?

A. Yes.

Q. What is PRINTING ?

A. The art of making an impression upon one body, by pressing it with another, leaving the characters or figures on paper, linen, silk, &c.

Q. What is the common story about the invention of PRINTING ?

A. It is said Laurentius of Haarlem diverted himself with cutting letters on the bough of a beech tree, and the

thought struck him, to take the impression off on paper with ink.

Q. But did not two of his servants steal his TYPES ?

A. Yes : and they fled to Mentz, where, under John Fust, they pretended to be the first inventors of printing.

Q. Is there not an old parchment of Laurentius's still preserved, in Germany ?

A. Yes : it has the alphabet and the Lord's prayer printed on it.

Q. How many kinds of PRINTING are there ?

A. Several : it is an art daily improving : one method is from movable letters ; another, by solid pages, casts of the above, called stereotype.

Q. What are these used for ?

A. The printing of books.

Q. What TOOLS are used in the art of PRINTING ?

A. A printing-press, cases of type, a composing stick, a roller, and printing ink.

Q. *Describe the common PRINTING-PRESS ?*

A. It consists principally of two parts, the body and the carriage, between which is the chase which contains the type, and the paper.

Q. *What is the TYPE called when arranged in the chase ?*

A. A forme.

Q. *Name the different TYPES used in PRINTING ?*

A. Great Primer, English, Pica, Small Pica, Long Primer, Bourgeois, Brevier, Minion, Nonpareil, and Pearl.

Q. *What is STEREOTYPING ?*

A. A process by which a page or any forme of composed type is made into a metal plate with raised letters so that a number of books can be printed at any time without composing new type.

Q. *What is meant by ELECTROTYPING ?*

A. It is an electric process by which composed type can be multiplied into as many plates as may be required ;

this is done by covering the surface with a thin coating of copper.

Q. *Has not the art of PRINTING been much improved of late years?*

A. Yes ; by the aid of the steam-press, which works with such rapidity, that upwards of twelve thousand sheets can be printed in an hour.

Q. *When was the first NEWSPAPER printed in England?*

A. In the reign of Queen Elizabeth, on occasion of the defeat of the Spanish Armada ; we next hear of them in the time of Charles II. when Sir Roger l'Estrange published a periodical paper, called the "Public Intelligencer."

Q. *How many NEWSPAPERS are now published in the United Kingdom?*

A. No less than 1585.

Q. *By whom was the first BIBLE printed?*

A. By Guttenberg, at Mentz, between the years 1440 and 1445. Several copies of this edition are still extant ; one in the possession of an

American gentleman was purchased at a cost of 3200 dollars.

Q. *Is not the Queen's Library at Windsor enriched with several early printed books ?*

A. In this collection, formed by George III., may be seen a book with magnificent type, on vellum, by Fust and Schoiffer, printed in 1457. There is also a copy of Luther's Bible, with his autograph.

Q. *What names are given to DIFFERENT SIZED BOOKS ?*

A. Folio volume, a book of two leaves ; octavo, of eight leaves ; duodecimo, of twelve leaves ; 16mo, of sixteen leaves, &c.

Q. *What are PAMPHLETS ?*

A. Books that contain only one or two sheets.

Q. *How are the PRINTED SHEETS formed into BOOKS ?*

A. By the bookbinder, who, when they are folded, stitches them together.

Q. *How does he next proceed ?*

A. He cuts the edges of the leaves with a machine called a plough, and then puts on covers made of mill-board with leather or cloth.

Q. *How are PICTURES printed?*

A. Upon copper, steel, wood, or stone plates, on which the picture is beautifully engraved.

Q. *How are LINENS, CALICOES, &c., printed?*

A. From blocks of copper, wood, or stone, on which are cut birds, flowers, or any other fancy patterns.

Q. *What is ENGRAVING on STONE called?*

A. Lithography ; it was brought into England in 1801, and is very useful in ornamenting books, and various other things.

Q. *What cities dispute the honour of giving birth to the men who claim the merit of the INVENTION OF PRINTING?*

A. Mentz, Haarlem, and Strasburg ; it is generally thought the first attempts at printing were made in the latter

city, by John Guttenburg, a native of Mentz.

Q. By whom was this invaluable art introduced into England?

A. By William Caxton, a merchant of London, who acquired the art during his travels abroad.

Q. What age was he when he taught his countrymen this useful and beautiful art?

A. Fifty-seven; he resided some years at Cologne, for the purpose of learning it, and printed above fifty books before he died.

Q. In what city of England did Caxton establish the first PRINTING PRESS?

A. At Westminster, where it is said the first book he printed was on the game of chess.

Q. Who is said to have invented CHESS?

A. Ulysses. William the Conqueror, King John, and Charles I., were doatingly fond of this scientific game.

Q. Do not printers use a peculiar kind of INK ?

A. Yes : it is like paint, and is applied to the printing-types by means of balls and rollers.

Q. Does it not dry very quickly ?

A. Yes, without running through to the other side, or blotting the letters.

Q. You have mentioned CHESS : pray is BACKGAMMON a very old game ?

A. Yes : it was played by the Danes, when in possession of England.

Q. By whom is it said to have been invented ?

A. By the Welsh, and called by them from two words in their language "back cammon," or, a little battle.

Q. What is INDIAN INK ?

A. An ink used in drawing, brought from China, in small oblong cakes, which on being dipped into water, and rubbed, makes a most beautiful black.

Q. How is it made ?

A. It is a great secret, unknown to Europeans ; but it is thought that it is made of fine lamp black, and another substance like glue.

Q. *Is there no other idea about this secret ?*

A. Yes : the cuttle-fish is furnished with a vessel which contains a quantity of dark inky fluid, and many think the Chinese make Indian ink of this, perfumed with musk and other things.

Q. *What is LAMP BLACK ?*

A. A soot prepared by burning the dregs and coarser parts of tar in furnaces, the smoke is carried through tubes into boxes covered with linen, upon which it settles.

Q. *What is then done ?*

A. This soot is carefully beaten off into boxes, and afterwards packed in barrels for sale.

Q. *What is it principally used for ?*

A. Printing and dyeing ; it received its name from formerly being made by means of lamps.

Q. What is IVORY BLACK ?

A. Burnt ivory or bones, which becoming quite black, and reduced to thin shavings, are ground in water to powder.

Q. What is it used for ?

A. Both painters and jewellers make great use of it.

Q. Who is the first person required in BUILDING a HOUSE ?

A. The architect, who prepares the plan worked out by the builder.

Q. What were the first HABITATIONS *erected ?*

A. Tents of various forms.

Q. Who was the FIRST BUILDER ?

A. Nimrod, the founder of Nineveh.

Q. Are not some of the remains of his palace still extant ?

A. Yes ; discoveries were made of many wonderful remains by Mr. Layard.

Q. Have not many of the ANCIENT MONUMENTS *been transported to this country ?*

A. Yes ; with great labour the ruins have been excavated, and some of these marvellous records of ancient history may now be seen in the British Museum.

Q. *Was not NINEVEH of great extent ?*

A. It is inferred from Scripture, and also from recent investigations, that it was sixty miles in circumference.

Q. *What is LIME ?*

A. It is a substance found in spars, shells, stones, marbles, and chalk ; it becomes lime by being burnt for a long time, after which it is called quick-lime.

Q. *What is its principal use ?*

A. To make mortar ; it is also useful in medicine and in several manufactures.

Q. *What are BRICKS ?*

A. They are made of a rich yellowish earth or clay, well mixed and prepared, then called loam.

Q. *How are they formed ?*

A. In wooden moulds, and are dried by being placed in the open air.

Q. *Are they then fit for building?*

A. No ; they must be piled up into square heaps, with cinders and straw between each brick to keep them hot, and then burnt.

Q. *How long will they require BURNING?*

A. Two or three weeks to do them thoroughly.

Q. *What are these square heaps of BRICKS called?*

A. Clamps ; but the best bricks are burnt in kilns, by means of a hot furnace underneath them.

Q. *Has not a machine been invented for making BRICKS?*

A. Yes : formerly a clever workman with proper assistance could mould and dress five thousand bricks per day ; now they can be made more rapidly.

Q. *In what countries were SUN-DRIED BRICKS formerly used?*

A. In Egypt, Babylon, and other Eastern countries.

Q. Are there not many different kinds of BRICKS ?

A. There are many varieties as to quality, colour, and shape, such as "malms," "fire-bricks," which are prepared to withstand the heat of fires ; "Dutch-clinkers," used for paving ; "Bath-bricks," the soft powder of which is used for cleaning knives, &c.

Q. When used for buildings, how are they joined together ?

A. By mortar.

Q. What is MORTAR ?

A. It is made by mixing lime, sand, and cut horse hair, with water : this mortar is used for plastering.

Q. What is the difference betwixt that and what is used for cement ?

A. No hair is used in the latter.

Q. What are TILES ?

A. A sort of thin brick, made of clayey earth, moulded of a certain thickness, dried, and burnt in a kiln.

Q. When were TILES first used for covering houses ?

A. In the reign of Henry III.;

previously the roofs of houses were thatched with straw.

Q. *What is CONCRETE?*

A. A mixture of powdered limestone, gravel, sand, and water; when settled it becomes as hard as stone, and is used for laying the floors of underground rooms to prevent damp.

Q. *What are SLATES?*

A. A sort of stone which splits into thin plates, and is used for covering buildings instead of tiles.

Q. *How are they fastened to the roof?*

A. By pegs driven through them, and they are made to lap over each other at the edges, in order to keep out the rain.

Q. *Where are the best SLATES found?*

A. The principal quarries are in Wales; they are also found in Westmoreland, Cumberland, Cornwall, and the west of Scotland.

Q. *Are there not two varieties of SLATE?*

A. Yes, the blue, and the red slate.

Q. *How are WRITING-SLATES made?*

A. A solid dark-coloured slate is chosen, which is split and smoothed with an iron instrument.

Q. *Is this all that is done?*

A. No, they are ground with sand-stone, slightly polished with tripoli, and lastly, rubbed with charcoal powder.

Q. *Are they now ready for use?*

A. Yes, when they have been cut into the requisite shape, and set in a wooden frame.

Q. *Are there not PENCILS for writing on these SLATES?*

A. Yes; they are made of a particular soft slate, which falls into long splintery fragments.

Q. *Is it not a business to form them into the requisite shape?*

A. Yes; they are split by a particular instrument.

Q. *Who principally use SLATES?*

A. Young persons, to cipher on.

Q. *By whom were the figures 1, 2, 3, &c., introduced into Europe?*

A. By the Saracens ; and arithmetic was considered so complex in the time of the Saxons in England, that it was said to be a study *too difficult for the mind of man.*

Q. *What is a HONE?*

A. A whetstone used for sharpening steel instruments.

Q. *Is not a peculiar kind of STONE used for this purpose?*

A. Yes ; it is formed of wood taken from a petrifying spring.

Q. *What is TRIPOLI?*

A. A kind of clay of an earthy texture, formerly brought into Europe from Tripoli in Africa, but is now found in many parts of Germany.

Q. *What is its use?*

A. It is valued for the polishing of metals and stones, mixed with sulphur.

Q. *Is not what we call ROTTEN-STONE a kind of TRIPOLI?*

A. Yes ; it is dug out of Derbyshire

and Staffordshire, and is used for most of the purposes of tripoli.

Q. *What is WHITENING ?*

A. A pounded chalk.

Q. *What is PUTTY ?*

A. It is made of white lead, whitening, and oil, well mixed together.

Q. *What are FLINTS ?*

A. Hard stones, found in pieces of different sizes, and commonly among chalk.

Q. *What are they principally useful for ?*

A. To burn into powder, to mix with clays in making china, and instead of sand to melt them into glass.

Q. *Are not walls and sometimes houses, built of FLINTS ?*

A. Yes.

Q. *How are GUN FLINTS made ?*

A. By simply striking the flint stone repeatedly with a kind of mallet, and bringing off at each stroke a splinter, sharp at one end and thicker at the other.

Q. *Are GUN FLINTS now much used ?*

A. They have been superseded by percussion caps.

Q. *What WEAPONS were used before the invention of fire-arms?*

A. The club, sword, spear, and the bow and arrow.

Q. *What WEAPONS are chiefly used by foot-soldiers?*

A. The musket or rifle, which by means of the bayonet fixed on its end is adapted for hand-to-hand fighting.

Q. *What change has been made in FIRE-ARMS?*

A. The old musket has been thrown aside for the rifle, and other improvements have been made, especially the Armstrong gun.

Q. *What is a TORPEDO?*

A. A machine filled with gunpowder, placed beneath the water, by means of which an enemy's ship is doomed to total destruction.

Q. *What are BOMB-SHELLS?*

A. Round balls of metal containing a charge of gunpowder, fitted to be discharged by cannon.

Q. *How is the BOMB discharged?*

A. A fuze or match is applied to the hole in the centre, which burns till the ball is near the ground, when, having reached the powder, it explodes, scattering destruction around.

Q. *What are GRENADES?*

A. Hollow balls, filled with powder, that can be thrown by the hand.

Q. *What is their usual size?*

A. They sometimes weigh three pounds, and when they explode do great mischief.

Q. *Of what are BULLETS made?*

A. Iron or lead cast in moulds.

Q. *What is SMALL SHOT?*

A. A kind of bullet about the size of pearl barley used for fowling pieces.

Q. *How is it made?*

A. Melted lead is run through a plate bored with small holes, into a body of water at a great depth below. The water immediately cools the little balls, and they become hard.

Q. *What is a PISTOL?*

A. A short fire-arm, usually carried by horse soldiers.

Q. *Why is it so called?*

A. From Pestoya, a city in Italy, where it was first manufactured.

Q. *What other WEAPONS are used by HORSE SOLDIERS.*

A. Swords, and spears, and sometimes a carabine.

Q. *What is a CARABINE?*

A. A fire-arm somewhat larger than a pistol, but shorter than a musket.

Q. *When were GUNS used?*

A. Not generally until the reign of Henry VIII.; and the first cannon-foundry was established in England in the first year of Mary's reign.

Q. *Was not the idea of the TRIGGER to the GUN taken from the catch of the CROSS-BOW?*

A. Yes; it is formed on the same principle.

Q. *Which is the FIRST SHIP on record having PORT-HOLES in her side for GUNS?*

A. The "Henry Grace à Dieu,"

built by Henry VIII. at Woolwich, the most ancient dockyard in England.

Q. Was she not the largest and most splendid vessel that had ever floated on the Atlantic?

A. Yes; for she had four masts, a very uncommon thing at that time, as most vessels had but one.

Q. Did she carry CANNON?

A. Yes, besides eighty guns and a crew of 700 men.

Q. What became of this fine ship?

A. It was burned in the dockyard of Woolwich, owing to the carelessness of its crew.

Q. What did they shoot from their GUNS and CANNONS in those days?

A. Stones, instead of iron bullets, which was an improvement afterwards found out.

Q. Of what are WAR SHIPS usually built?

A. Of iron, or iron plated on wood.

Q. By what names are the SHIPS in the English navy distinguished?

A. Ships of the line, frigates, brigs, and sloops.

Q. *How many GUNS do SHIPS OF THE LINE carry?*

A. From seventy to a hundred and thirty; they have two decks to carry them upon.

Q. *What are FRIGATES?*

A. Vessels that carry a smaller number of guns, with only one deck.

Q. *What is the difference between a BRIG and a SLOOP?*

A. A brig is a vessel with two masts; a sloop has only one.

Q. *Where are the chief DOCKYARDS of the English navy?*

A. Portsmouth, Plymouth, Chatham, and Milford.

Q. *Name the chief HARBOURS for merchant vessels.*

A. London, Liverpool, Bristol, and Hull.

Q. *How is a SHIP guided?*

A. By the rudder, which is a large piece of wood on hinges turned by a wheel and chains on the deck.

Q. *By what means is a SHIP retained in a HARBOUR ?*

A. By the anchor, an iron instrument consisting of a shank, having at one end a ring to which a cable is fastened, and at the other two barbed arms.

Q. *What is a CAPSTAN ?*

A. A machine by which the anchor is drawn up.

Q. *What is a QUADRANT ?*

A. An instrument, of great use in navigation, consisting of an arch containing the fourth part of a circle or 90 degrees, through which the altitude of the heavenly bodies may be ascertained.

Q. *Who is said to have founded the British navy ?*

A. King Alfred.

Q. *What QUEEN gave much encouragement to NAVIGATORS ?*

A. Elizabeth ; she was therefore called " Queen of the Northern Seas."

Q. *What are GALLEYS ?*

A. They are decked vessels with a great number of oars.

Q. *Is it not very laborious work to row these GALLEYS ?*

A. Yes ; it was formerly made abroad a punishment for criminals, who were chained to their benches.

Q. *What is PORTLAND STONE ?*

A. It is a stone obtained from a mass of rocks, named the Isle of Portland, in Dorsetshire.

Q. *What is PORTLAND STONE generally called ?*

A. Free-stone, because it does not split as some do, but may be freely cut any way.

Q. *Does not this render it one of the best stones for building ?*

A. Yes ; besides which, on its being exposed to the air, it becomes hard and beautifully white.

Q. *What PUBLIC BUILDINGS in London are built of it ?*

A. Several of the bridges, St. Paul's Cathedral, the Monument, Whitehall, &c. After the great Fire of London,

Sir Christopher Wren brought it into general use.

Q. *What other place in Dorsetshire is noted for its STONE QUARRIES?*

A. Purbeck, near Portland; the stone is very useful for paving the broad foot-paths in the streets.

Q. *How many CHURCHES did Sir Christopher Wren build in London?*

A. Fifty-eight; of these St. Paul's is his greatest work.

Q. *How long was it in building?*

A. Thirty-five years; Sir Christopher died the year it was finished, aged ninety.

Q. *What does the MONUMENT commemorate?*

A. The Fire of London; it is erected on the spot where it first broke out, and directly opposite to it once stood the house of the Black Prince.

Q. *Where was the first STONE CHURCH erected?*

A. At Lincoln, and it was thought a great curiosity.

Q. Where was the first STONE LIGHTHOUSE erected?

A. On the Eddystone rock at the entrance of Plymouth harbour.

Q. By whom, and when, was this LIGHTHOUSE constructed?

A. By Mr. Smeaton ; the first stone was laid in 1757 ; the whole was completed in two years, when the warning light shone forth over the troubled waters, from one of the most dangerous rocks on our coast.

Q. Did not a LIGHTHOUSE stand on that reef previously?

A. One had been raised by Mr. Winstanley in 1698 ; after standing three years it was washed away, with the architect and his workmen, by one of the most fearful storms that ever ravaged our shores.

Q. How are the LAMPS for LIGHTHOUSES constructed?

A. They are Argand burners, the light from which is reflected from concave or hollow mirrors made of polished metal.

Q. *What is a BREAKWATER ?*

A. An immense pile of stone or wood stretching into the sea to break the force of the waves.

Q. *Where are the most celebrated BREAKWATERS on the English coast ?*

A. There is one at Plymouth nearly a mile in length, another at Portland a mile and three-quarters in length, the first stone was sunk by the Prince Consort, and the completion stone laid by the Prince of Wales, twenty-three years after.

Q. *Who built WESTMINSTER HALL ?*

A. Willian Rufus ; it is one of the largest rooms in Europe supported without a pillar : he also built the Tower of London.

Q. *What is remarkable of the death of this king ?*

A. That being at dinner with Sir Walter Tyrrel, before he went out hunting he desired some arrows to be brought him, and picking out six very long and sharp ones, he gave two of them to Sir Walter, saying, " You are

a good marksman and know how to use them."

Q. *Was it by one of these arrows he was shot?*

A. Yes; in the New Forest in Hampshire.

Q. *How much did Henry VII. expend in building the superb CHAPEL called after him at WESTMINSTER?*

A. £20,000, a very large sum in those days.

Q. *Was not the skill of foreign artists employed in this masterpiece of ARCHITECTURE?*

A. Yes; and Torrigiano, a Florentine of some note, is said to have erected his tomb, which excites the admiration of modern architects.

Q. *How many styles of ARCHITECTURE are there?*

A. The Grecian, which includes the Doric, Ionian, Corinthian, Tuscan, and Composite; the Gothic, the Egyptian, and the Saracenic, beside more modern ones.

Q. Of what does each order of GRECIAN ARCHITECTURE consist?

A. Of a column and entablature.

Q. Into how many parts is the column divided?

A. Into the base, the shaft, and the capital.

Q. Of what does the ENTABLATURE consist?

A. The architrave, which is the part supported by the pillar, the frieze directly above, and the cornice at the top.

Q. What celebrated TEMPLE was built in the DORIC style?

A. The Parthenon, or Temple of Minerva, at Athens.

Q. What is said to be the origin of the CORINTHIAN ORDER?

A. It is related that a Greek architect passing by the grave of a Corinthian maiden was struck with the beauty of the foliage of an ancanthus plant that had sprung up and encircled a basket, and he conceived the idea of

ornamenting the Ionic capital in the same way.

Q. *By whom was the GOTHIC ORDER introduced into England?*

A. By the Normans in the reign of Richard I.

Q. *What is remarkable of the EGYPTIAN style?*

A. Its great solidity; the Pyramids being some of the most ancient buildings still in existence; the highest is nearly 500 feet in height.

Q. *What are the principal features of the SARACENIC ORDER?*

A. Its solidity, lightness, and ornament. The Alhambra Palace at Granada in Spain, an imitation of which may be seen at the Crystal Palace, is an illustration.

Q. *Were not some of the finest GOTHIC BUILDINGS we have, built in the reign of Henry III.?*

A. Yes, the carved work of all kinds was most elaborate, and the outsides were adorned with pinnacles and lofty steeples.

Q. Could such curious buildings be erected by common workman?

A. No: a number of the best artificers formed themselves into a company and went about from place to place as they were wanted.

Q. What did they call themselves?

A. Free-masons; and this is the origin of the famous society of free-masons.

Q. Who was the celebrated CARVER IN WOOD, in James the Second's time?

A. Gibbons; some of the finest specimens of his festoons of flowers are to be seen at Windsor and at Petworth in Sussex.

Q. What is GRANITE?

A. A valuable stone, noted for its hardness and durability; it is abundant in Cornwall, and forms the summits of most of the highest mountains in the world.

Q. What are its uses?

A. The carriage-way of the streets of London are paved with it on account

of its strength ; millstones, steps, &c., are made of it.

Q. In what other manner are CAR-RIAGE ROADS PAVED ?

A. Some are paved with wood, which makes them very quiet, but in wet weather they are slippery ; others are macadamized.

Q. What do you mean by MACADAM-IZED ?

A. The stones are broken into small pieces and strewed over the roads, which are then rolled with a steam roller. This method is so named from the inventor, MacAdam.

Q. Where was the first STEAM ROAD ROLLER seen in England ?

A. At Liverpool, in 1867.

Q. Has the weather any effect upon GRANITE ?

A. Very little ; and this induced the proprietors of Waterloo Bridge to use it for that noble structure ; it is also used for the new London Bridge.

Q. Who built the first STONE BRIDGE in London ?

A. The Empress Maud or Matilda, the daughter of Henry I., at Stratford-le-Bow.

Q. *In whose reign was OLD LONDON BRIDGE built, which was destroyed in the time of George IV.*

A. In that of King John ; the former one had been of wood.

Q. *Where is the most ANCIENT BRIDGE remaining in England?*

A. At Croyland, in Lincolnshire ; it is said to have been built in 860.

Q. *Is it not of a very singular shape?*

A. Yes ; it is triangular, and the ascent is so steep that only foot passengers can go over it.

Q. *What is a SUSPENSION BRIDGE?*

A. A bridge suspended by means of iron chains attached to a tower at each end.

Q. *Where is the largest SUSPENSION BRIDGE in Great Britain?*

A. Across the Menai Straits, which separate Caernarvonshire from the Isle of Anglesea.

Q. *By whom was this BRIDGE erected?*

A. By Mr. Telford in 1825.

Q. *What other BRIDGE crosses the Menai Strait?*

A. The Britannia railway tubular bridge.

Q. *When was it opened?*

A. In 1850. It is one of the greatest engineering works of Mr. Robert Stephenson, being formed of tubes in two lines, as passages for the up and down trains across the Straits. It is also constructed so as to enable large vessels to sail beneath it.

Q. *Of what are the TUBES formed?*

A. Of wrought iron; they were constructed on the shore, then floated to the base of the bridge towers, and raised to their proper elevation by hydraulic machinery.

Q. *Is there not a fine SUSPENSION BRIDGE at Clifton?*

A. Yes; it formerly crossed the Thames near Hungerford Market, and was removed to Clifton in 1863 to make room for the railway station.

Q. *Which is considered the finest BRIDGE in London?*

A. Westminster Bridge, which was opened in 1862.

Q. *Is not the TEMPLE CHURCH well worth the attention of the curious?*

A. Yes ; it was built by the Knights Templars after the model of that of the Holy Sepulchre ; it is curious for its antiquity, architecture, and the monuments of some of the old knights.

Q. *Were not great honours allowed to all knights who returned from the holy wars?*

A. Yes ; and at their death they were privileged to have their figures represented with their legs crossed on their tombs.

Q. *What do you mean by GEMS ?*

A. Precious stones.

Q. *Which are esteemed the most valuable GEMS ?*

A. The diamond, ruby, emerald, and sapphire ; then the amethyst, topaz, and aqua-marine are considered of

equal value, and the garnet is the cheapest.

Q. *What is the peculiar property of the DIAMOND?*

A. It is the hardest and most brilliant of all natural productions, and can only be cut and polished by its own powder.

Q. *What did the ancients call it?*

A. Adamant; and all the precious stones were known to them by the same names we call them.

Q. *In what HOLY BOOK are all these STONES enumerated?*

A. In the Bible; they formed the breast-plate of Aaron, the high-priest.

Q. *What was this BREAST-PLATE called?*

A. The Urim and Thummim: these mean *light* and *perfection*.

Q. *What was engraved on each of these STONES?*

A. The name of one of the tribes of Israel; they declared the pleasure of the Almighty by shining brilliantly,

or appeared dull when He disapproved.

Q. *Who taught the ISRAELITES the art of working GOLD and PRECIOUS STONES?*

A. God Himself, who inspired one of the tribe of Judah with the knowledge of cutting stones, setting in gold and silver; also, carving in wood.

Q. *Where are DIAMONDS found?*

A. The best come from the East Indies; but they are also found in Borneo, and in several parts of South America, and in South Africa.

Q. *Which are the principal MINES?*

A. Those of Golconda and Orissa in Hindostan; there are also some very celebrated diamond mines in Brazil, in South America.

Q. *How are DIAMONDS discovered?*

A. By men, who by means of long iron rods, with hooks at the end, draw them out of the crevices of rocks, and afterwards wash them in tubs.

Q. *Are they found BRIGHT?*

A. No ; they are buried in earthy lumps, which are broken up and washed, when the sparkling diamond is discovered.

Q. *Who possesses the largest DIAMOND in the world ?*

A. The Emperor of Brazil ; it is called the Braganza diamond, and weighs 1680 carats.

Q. *What celebrated DIAMOND is in the possession of Queen Victoria ?*

A. The “Koh-i-nor,” or “Mountain of Light,” which was found in the mines of Golconda.

Q. *When did it fall into the hands of the English ?*

A. When the Punjaub was added to our Indian possessions.

Q. *Was not a very celebrated DIAMOND found in Brazil in 1853 ?*

A. Yes, the “Star of the South,” which weighs more than 254 carats.

Q. *To whom did the famous SANCY DIAMOND belong ?*

A. To the Duke of Burgundy, who was slain at the battle of Nancy.

Q. Did not that nobleman leave another valuable DIAMOND on the battle field?

A. Yes ; it was found by a soldier who sold it for a very small sum. It now adorns the Pope's tiara.

Q. Has not the Emperor of Russia a very fine DIAMOND in his possession?

A. Yes ; it weighs $194\frac{1}{4}$ carats, and is the chief ornament in his sceptre.

Q. What story is told of this DIAMOND?

A. It once formed an eye in the head of the great idol of Sheringdar, and afterwards figured in the famous peacock throne of Delhi ; it was carried off in the confusion that ensued on the assassination of Nadir Shah, and after passing through several hands, was purchased by Prince Orloff for £90,000 and presented to Catherine II. of Russia.

Q. What is the famous PITT DIAMOND?

A. It was a magnificent one, purchased by a Mr. Thomas Pitt, and sold by him to the Regent Duke of Orleans for £135,000.

Q. *Whose sword of state did it afterwards ornament?*

A. Buonaparte's, but it was taken by the Prussians at the battle of Waterloo.

Q. *How is the VALUE of a DIAMOND estimated?*

A. By its weight in carats, and its transparency and brilliancy.

Q. *What is the chemical nature of the DIAMOND?*

A. It consists solely of carbon, being, in fact, a crystallized charcoal.

Q. *Are not some DIAMONDS tinted?*

A. Yes; some are yellow, blue, green, brown, or rose colour; but they are much inferior to those absolutely transparent.

Q. *Is the diamond only useful as an ORNAMENT?*

A. No; it is used by lapidaries for slitting hard stones; also for cutting

and engraving other gems, and in the finer kind of clock-work, as well as cutting glass among glaziers.

Q. *What do you mean by a LAPI-
DARY?*

A. It is his business to cut into shape and polish these gems, or precious stones, which is done by grinding them on a wheel with diamond powder.

Q. *Does he set them?*

A. No; this is the business of the jeweller, and requires great taste.

Q. *What is the RUBY?*

A. A precious stone of a bright red colour.

Q. *Where is it found?*

A. In the sand of rivers in Ceylon, Pegu, and Mysore.

Q. *Where is CEYLON?*

A. An island in the Indian Ocean.

Q. *Where is PEGU?*

A. A country in the eastern peninsula of India.

Q. *Where is MYSORE?*

A. A province in the South of India.

Q. Who possesses the largest RUBY in the world?

A. The Czar of Russia ; it is set in the imperial crown.

Q. Is there not an immense RUBY set in her Majesty's imperial crown?

A. Yes ; it is said to have been worn by the Black Prince at the battle of Cressy, and by Henry V. at the battle of Agincourt.

Q. What is a CARBUNCLE?

A. A gem of great rarity, resembling the ruby in colour, which it exceeds in size.

Q. Was it not regarded with great superstition by the ancients?

A. Yes ; they supposed it to be taken from the dragon's head, and knights are said to have fought with that creature in order to obtain it.

Q. What is the EMERALD?

A. A very rare gem of a dark green colour, brought also from Pegu, and other parts of the East Indies.

Q. Where do most of the EMERALDS

that are now brought to Europe come from?

A. They are obtained from a mine in the valley of Tunca, between the mountains of New Grenada and Popayan, in South America.

Q. *What was the size of the largest EMERALD mentioned?*

A. It was as big as an ostrich's egg, and was worshipped by the Peruvians under the name of the Goddess, or Mother of Emeralds.

Q. *Did they not bring the smaller ones as offerings to it?*

A. Yes; and the priests called them the daughters of the large one.

Q. *What is the SAPPHIRE?*

A. A beautiful gem of a fine blue colour, brought from the East Indies, and the island of Ceylon, where it is found in the sand of the rivers.

Q. *What is the AMETHYST?*

A. The Oriental amethyst is an extremely rare gem, of a rich purple colour.

Q. But what is the COMMON AMETHYST which is chiefly seen ?

A. It is a violet-coloured rock crystal, highly polished and transparent, cut into beautiful stones for necklaces, bracelets, ear-rings, &c.

Q. Where do they come from ?

A. The most valuable from India and Ceylon, but the greater number from Brazil and Peru, in South America.

Q. What is the TOPAZ ?

A. A gem of a bright yellow colour ; but there are orange, pink, and blue topazes.

Q. Where do the finest come from ?

A. Brazil, Saxony, and many parts of Europe. Brazilian topazes, by being exposed to great heat, become pink.

Q. Are they much valued ?

A. No ; they are too common to be thought much of by the lapidary or jeweller.

Q. What STONE much resembles the TOPAZ ?

A. The cairngorm, which is a species of crystallized quartz.

Q. *Whence is it obtained?*

A. From the mountain Cairngorm in Inverness-shire.

Q. *Are they in much repute?*

A. Yes; they are nearly as valuable as topazes, and if of a good colour, clear, and large they are sold at a high price.

Q. *What is the BERYL, or AQUA-MARINE?*

A. It is a stone of a light sea green; the most beautiful are brought from the borders of China, and from Siberia and Brazil.

Q. *What people hold the large ones in great esteem?*

A. The Turks, who value them for the handles of their stilettoes.

Q. *Is not the GARNET a very fine STONE?*

A. Yes; it is a gem of a dark crimson colour; the best are brought from Bohemia, where there are mines of them.

Q. *Where is* BOHEMIA ?

A. A fine kingdom in Germany.

Q. *What is the* CORNELIAN ?

A. A stone in great request for seals, beads for necklaces, &c., usually of a red colour, though sometimes white, orange, or yellow.

Q. *Where are they found ?*

A. In most countries ; but the finest come from India, and form a considerable branch of trade.

Q. *What is the* CHRYSOLITE ?

A. A beautiful stone of a delicate apple-green colour, much prized by jewellers, brought from Silesia, in Germany.

Q. *What are* OPALS ?

A. A half-transparent kind of stones which have a milky cast, and when held betwixt the eye and light, appear blue, green, red, and yellow.

Q. *Where are these very beautiful* STONES *obtained ?*

A. The principal opal mines in the world are those of Hungary ; but they are found in other parts of Europe,

and also in Sumatra, and the East Indies.

Q. *Is there not another kind of* OPAL?

A. Yes; the hydrophanous opal, which in its natural state is opaque, but after having been immersed in water becomes transparent.

Q. *By what other name is this* OPAL *called?*

A. *Oculus mundi*, or eye of the world, from a bright spot in the stone which changes its place as the position in which it is held is varied.

Q. *What is the* TURQUOISE?

A. A beautiful light blue substance, set in rings, &c.

Q. *In what country are they very common?*

A. In Persia; and the Turks value them highly, and constantly wear them in some part of their dress, and particularly to adorn the handles of their stilettos.

Q. *Who possesses the finest* TURQUOISE *in the world?*

A. The Shah of Persia, whose treasury of jewels far surpasses that of any other monarch; this elegant stone is of a most lovely colour, three or four inches in length without a flaw.

Q. *Where is there a mine of these STONES?*

A. At Neshabour, south of Meschid, in Persia.

Q. *From what country are they brought into England?*

A. From Russia; and they are stuck with pitch upon the ends of straws; because, if mixed, the purchaser would not so easily observe their colour, which is their chief value.

Q. *Can they be easily imitated?*

A. Yes, in paste; and are often imposed upon the ignorant purchaser.

Q. *How are other artificial GEMS made?*

A. From glass, which is coloured with various metals, according to the colour of the imitated gem.

Q. *What are PEARLS?*

A. They are formed in the shells of a large oyster, in consequence of some outward injury the shell has received.

Q. *How is this proved?*

A. Because the pearls are always found just in these places, and there is a small worm which will work its way quite through to the animal.

Q. *And does this cause them?*

A. It is so thought ; for if the shell looks quite smooth and uninjured, it is not likely to contain any pearls.

Q. *Where do these OYSTERS abound?*

A. In the seas about the East Indies, and particularly in the Persian Gulf, and Ceylon.

Q. *Where are the richest PEARLS produced?*

A. At Ormuz, an island at the entrance of the Gulf of Persia.

Q. *Are they easily obtained?*

A. By no means ; for these oysters lie at the bottom of the sea, and can only be got at by diving.

Q. *What do you mean by DIVING?*

A. Men sinking themselves, by tying stones to their bodies, in the places where the fish are supposed to lie.

Q. *What do they do when arrived at the bottom?*

A. They begin filling a bag of network, which is hanging round their necks, with the oysters, for they go down into the water with their eyes open.

Q. *Do they not soon lose their breath.*

A. Some are able to hold it five minutes but others can only remain under water about two.

Q. *How do they get up when exhausted?*

A. They pull a rope which is fastened to them, as a signal to their companions in the boat to draw them up.

Q. *Is not DIVING much facilitated by the use of the DIVING-BELL?*

A. Yes; by this clever contrivance the diver can be supplied with fresh

air, so that he can remain a long time under water.

Q. *Of what form is the DIVING-BELL?*

A. It is like an inverted tumbler, with a seat placed in the upper part, as when lowered into the sea the water does not rise to the summit, and so a man may sit within it without being wetted, and have sufficient air to keep him alive for a certain time.

Q. *How may the DIVER leave the MACHINE in safety when it reaches the bottom of the sea?*

A. His head is covered with a hood, to one end of which is fastened a flexible leathern hose through which fresh air is forced by means of a kind of air-pump from above.

Q. *In what manner does the DIVER SIGNAL when he desires to be raised?*

A. By the strokes of a hammer on the metal of the bell, which sounds are admirably conducted to those above through the medium of the water.

Q. For what practical purposes are DIVING-BELLS used?

A. In laying the foundations of bridges, in constructing breakwaters, and also in ascertaining the condition of sunken vessels.

Q. Is there not another contrivance by which DIVERS may descend into deep waters?

A. Yes; by means of an air-tight dress, to the head part of which an air-tube is attached.

Q. Are not DIVING-BELLS of great antiquity?

A. Yes; we read of Alexander the Great having a machine in which he was let down to the bottom of the ocean.

Q. When were they first used in modern times?

A. In the sixteenth century, when two Greeks descended in an inverted vessel in the presence of Charles V.

Q. How often will pearl-divers go down in a day?

A. Forty or fifty times, and at each

plunge will return with more than a hundred shells.

Q. How many PEARLS will one SHELL contain?

A. Sometimes a hundred, large and small; but often more than a hundred will be opened, and not a single pearl of value found.

Q. How do they get the PEARLS out of the OYSTERS?

A. When they have got a great many oysters, they are placed in heaps on the shore, covered with sand, where they continue about ten days.

Q. What does this cause?

A. The fish to decay and open, and the sand being sifted, the pearls are found.

Q. What is then done with them?

A. They are cleaned, polished, and bored, and washed in salt and water, to remove any stains.

Q. How is the VALUE of PEARLS estimated?

A. By their size, roundness, colour,

and brightness ; it is a difficult task for the pearl merchants to class them.

Q. *Which were the most renowned PEARLS ever mentioned ?*

A. The two which formed Cleopatra's ear-rings.

Q. *What was the value of these two PEARLS ?*

A. It is recorded by Pliny, that the value of each was fifty-two thousand pounds sterling.

Q. *What did she do with one, to transmit her boundless extravagance to posterity ?*

A. She gave an entertainment to her favourite Antony, which she declared should cost upwards of fifty thousand pounds.

Q. *How did she contrive to expend this immense sum on one feast ?*

A. Everything appeared very costly and magnificent, yet there was nothing which could cost that sum.

Q. *What observation did Antony make upon this ?*

A. He began to joke, when Cleopa-

tra commanded him to be patient; "What you see," added she, "is only the first course; I will myself sup on that sum."

Q. What did she mean?

A. She gave a signal, when two beautiful boys, richly dressed, brought her a magnificent vase, studded with diamonds, which contained a strong vinegar.

Q. What use did she make of it?

A. The queen took from her ear one of her magnificent pearl ear-rings, and throwing it into the vase, watched with delight the gradual melting of this precious jewel; after which, gracefully drinking to the health of Antony, she swallowed the costly draught.

Q. What became of the remaining PEARL?

A. It was found among the treasures of which Cæsar possessed himself, and was sawn in two for ear-rings for his daughter Julia.

Q. Was this not a proof its equal could not be obtained?

A. Yes.

Q. *But is there not another story respecting this famous PEARL?*

A. Yes, it was said to have been divided for the decoration of the image of Venus, the most perfect piece of sculpture of Praxiteles.

Q. *What was this IMAGE celebrated for?*

A. It was of marble, so brilliantly white, and so entirely resembled life, that it appeared as if really animated.

Q. *Who was PRAXITELES?*

A. A famous Grecian sculptor.

Q. *What PEARLS do the English consider as most valuable?*

A. Those brought from the fishery of Ceylon.

Q. *Are not PEARLS found in Great Britain.*

A. Yes, in the river Conway, in Wales, and on the shores of the Tay, and other parts of Scotland.

Q. *What is MOTHER-O'-PEARL?*

A. The inner part of the shell of the pearl oyster.

Q. *Is not this SHELL extremely brilliant and smooth on the inside?*

A. Yes, and it has the same lustre on the outside, when the scales have been cleared off by aqua-fortis, and the lapidary's mill.

Q. *What is its USE?*

A. It is made into snuff-boxes, buttons, spoons, fish, and counters for card-players, and is an article of great traffic with China.

Q. *How are PEARL BUTTONS made?*

A. They are cut out of the oyster by a small steel tube, holes are bored, and the buttons are polished with rotten-stone and soft soap.

Q. *Of what other materials are BUTTONS made?*

A. Of metal, glass, ivory, bone, silk, and some have even been made of the berries and seeds of tropical plants.

Q. *How are SILK BUTTONS made?*

A. By weaving the silk over wooden moulds by machinery.

Q. *In what manner are others formed?*

A. Metal buttons are coined, with the shank afterwards soldered in; glass buttons are made by pouring the glass in a liquid state into moulds; bone and ivory are formed with sharp steel instruments.

Q. *Where is the largest BUTTON MANUFACTORY in England?*

A. At Birmingham, where the button makers are estimated at 6,000 in number.

Q. *Where are PORCELAINE BUTTONS manufactured?*

A. At Brière in France.

Q. *What are the beads called ROMAN PEARLS?*

A. They are beads cut from thin lamina of alabaster, and then dipped into a composition, made of the scales of a fish, called the argentina.

Q. *Is not this IMITATION extremely good?*

A. Yes; for they can copy the accidental defects of colour and form which occur in the real gem, as well as

its brilliancy, so exquisitely, as to deceive a practised eye.

Q. *What is their great defect?*

A. They are very heavy.

Q. *Where is this most curious manufacture carried on?*

A. At Rome, which is the reason of their being called Roman pearls.

Q. *What is TORTOISE-SHELL?*

A. The hard, horny covering of the tortoise, used in inlaying, and in various other works, such as snuff-boxes, combs, &c.

Q. *Pray what great king was nursed in the shell of a TORTOISE?*

A. Henry the Fourth of France; the cradle was long preserved in the castle of Pau, which was Henry's birth-place.

Q. *What else is still preserved there?*

A. A huge steel two-pronged fork, which was used by him, and thought a most delicate invention.

Q. *When were FORKS introduced into this country?*

A. Not till the time of James I.,

and it was thought a piece of affectation to use them in preference to fingers.

Q. *Did not this dirty habit oblige all to wash before and after meat?*

A. Yes.

Q. *When were KNIVES first made in England?*

A. In the reign of Queen Elizabeth, by one Matthews, on Fleet Bridge.

Q. *What is CORAL?*

A. A beautiful branched substance, formed at the bottom of the sea, by small animals, called polypes, and it is their habitation.

Q. *What is it like?*

A. The red coral looks like branches of red sealing wax.

Q. *What is it principally used for?*

A. To cut into beads, for ornaments, &c.

Q. *Where is this WONDER found?*

A. In the Red Sea, between Asia and Africa, and many parts of the Mediterranean, particularly about Marseilles, Tunis, Sardinia, &c.

Q. *From what cause does the RED SEA derive its name?*

A. Many have thought from its rocks of coral; but that is certainly not the only reason.

Q. *What is the other?*

A. This sea belonged to Esau, Jacob's brother, who was called Red from his hair being of that colour.

Q. *Was it close to the country where he lived?*

A. Yes; and that land was called Red Land, and most probably the sea was also so named.

Q. *Where is MARSEILLES?*

A. A sea-port in the south of France; in the department of the mouths of the Rhone.

Q. *Is there not WHITE CORAL?*

A. Yes; but it is of little value, and chiefly found on the shores of Ceylon.

Q. *Have there not been many beautiful pieces of SCULPTURE in CORAL.*

A. Yes; the finest specimens known are a chess-board and men, in the Tuileries.

Q. *What is* IVORY ?

A. The tusks of elephants ; they are much longer in the male than the female.

Q. *What island produces the best ?*

A. The whitest, smoothest, and most compact ivory, comes from Ceylon ; it also never turns yellow.

Q. *What sort of an animal is the* ELEPHANT ?

A. He is the largest of all land animals, his strength is so great that with his trunk he roots out trees, and he can carry burdens which six horses cannot move.

Q. *Is he not very tractable ?*

A. Yes : he is also faithful and attached to those who have at any time shown him kindness.

Q. *How was he regarded by the ancients ?*

A. They endowed him with intellectual qualities and moral virtues.

Q. *Where is the* WHITE ELEPHANT *held in veneration ?*

A. In some parts of India and

Ceylon. They have temples erected to their honour, with a number of servants to attend them, and they are supplied with food in golden vessels.

Q. Who introduced ELEPHANTS into Europe?

A. Alexander the Great, who took them from an Indian prince and sent them into Greece.

Q. Are ELEPHANTS used in modern warfare?

A. They are used by the British army in the East, in drawing cannons up precipices which would be inaccessible to our cavalry.

Q. What other animals furnish us with IVORY?

A. The walrus or sea-horse and hippopotamus; the latter being exceedingly hard and white.

Q. What quantity of IVORY is annually imported into England?

A. About fifty thousand elephants' tusks, besides large quantities of fossil ivory.

Q. What is FOSSIL IVORY?

A. The tusks of the mammoth, which is found plentifully, and in a high state of preservation, in the islands and on the shores of the Frozen Sea.

Q. *What use is made of the scrapings and sawdust of IVORY?*

A. It is sometimes made into jelly by the pastry-cook, and it is also used by straw hat manufacturers.

Q. *How may IVORY be coloured?*

A. By various metallic dyes.

Q. *What is the great use of IVORY?*

A. For making boxes, dice, fans, ornamental utensils, piano keys, &c.

Q. *What people excel in carving IVORY?*

A. The Chinese and Indians.

Q. *What is AMBER?*

A. A substance usually of a golden yellow colour, found on the south coast of the Baltic, Sicily, and the Adriatic.

Q. *Is it not sometimes dug out of mines?*

A. Yes: there is a fine mine in

Prussia, and there is a gum so nearly like amber, that it can scarcely be distinguished from it.

Q. *Is it exactly known what AMBER is?*

A. No ; but from the insects often found in it, it is supposed to have once been in a fluid state.

Q. *What peculiar property is possessed by AMBER?*

A. That of electricity, which is so named from *electron*, the Greek word for amber.

Q. *What do you mean by ELECTRICITY?*

A. The property of attracting light bodies, and at the same time emitting a spark of light.

Q. *How is this power excited?*

A. By contact, pressure, or friction.

Q. *To what wonderful purpose has ELECTRICITY been applied?*

A. To that of the Electric Telegraph, by means of which the most rapid

communication is effected with distant places.

Q. How are these MESSAGES conveyed?

A. By means of a machine furnished with a large dial on which are inscribed the letters of the alphabet; to this are attached two movable magnetic needles.

Q. How can the ELECTRIC FLUID cause the NEEDLES to move?

A. By moving a brass handle fixed to the dial, a current of electricity is passed through the instrument which is at the other end of the wire.

Q. When was the ELECTRIC TELEGRAPH first used in England?

A. In 1838.

Q. To whose researches are we indebted for the practical use of the ELECTRIC TELEGRAPH?

A. To those of Professor Wheatstone, whose experiments and discoveries are of the most ingenious and valuable character.

Q. How are the TELEGRAPH WIRES usually fixed?

A. On poles at various distances, connected with galvanic batteries.

Q. What is a GALVANIC BATTERY?

A. A number of plates of silver and zinc, or zinc and copper placed alternately in a trough filled with water and nitrous acid, producing a powerful shock.

Q. Are not MESSAGES also conveyed by sea?

A. Yes, by means of submarine telegraphs which are laid in the depths of the sea.

Q. How are the TELEGRAPH WIRES protected from injury by the WAVES?

A. By means of gutta-percha tubes in which they are enclosed.

Q. When was the ATLANTIC CABLE completed?

A. In 1866; it extends from Valentia, in Ireland, to Heart's Content, Newfoundland, it is 1901 miles in length, and is laid two miles deep in water.

Q. What celebrated STEAM-VESSEL has been used for laying down SUBMARINE TELEGRAPH CABLES in all parts of the world?

A. The Great Eastern.

Q. Was the power of ELECTRICITY known in early times?

A. Mention is made of its power so early as 600 B.C., but it received very little attention from scientific men until the seventeenth century.

Q. How many kinds of ELECTRICITY are there?

A. Two; positive and negative, the former coming in contact with the latter produces what is called the electric shock.

Q. What is the LEYDEN JAR?

A. An electrical machine in the form of a cylindrical glass jar, coated on the inside and the outside with tinfoil nearly to the top.

Q. Is the JAR thus complete?

A. A cover of baked wood is inserted with sealing-wax to exclude moisture and dust, and a metallic rod

with a knob at its upper end passes through the cover till it touches the interior coating.

Q. *Why is it called the LEYDEN JAR?*

A. From its having been discovered at the city of Leyden.

Q. *Has not ELECTRICITY been used with much success by medical men?*

A. Yes ; it has been applied to the human frame in the shape of belts, and by means of galvanism, with astonishing success.

Q. *In what respect does GALVANISM differ from ELECTRICITY ?*

A. The former is produced by chemical action, the latter by mechanical action.

Q. *Who discovered GALVANISM ?*

A. An Italian named Galvani, who by accident observed that the legs of a recently killed frog became convulsed when near an electrical machine in motion.

Q. *Do not some FISHES possess the power of producing ELECTRICITY ?*

A. Yes ; the most remarkable are

the torpedo, found in the Mediterranean, and the gymnotus, a native of the South American rivers.

Q. *What kind of FISH is the TORPEDO ?*

A. It belongs to the same family as the shark ; it can give a benumbing touch to every animal that approaches it.

Q. *What is the GYMNOTUS ?*

A. It is a kind of eel which attains the length of five or six feet, and communicates shocks so powerful, that men and horses have been stunned by them.

Q. *What is EAU-DE-LUCE ?*

A. Oil of amber, mixed with sal-ammoniac.

Q. *What is SAL-AMMONIAC ?*

A. Salts formed from ammonia, and muriatic acid, formerly brought from Egypt.

Q. *From what did it derive its name ?*

A. From being found in great abund

dance among the sand, near the temple of Jupiter Ammon, in Africa.

Q. *How is it now made in Europe?*

A. By burning at the same time soot, bones, oil, and salt, with other substances.

Q. *Is it applied to many useful purposes?*

A. Yes ; it is used in medicine, and by dyers to give brilliancy to many of their colours ; also by copper-smiths and tanners, to clean the surface of metals, &c.

Q. *What is SAL-VOLATILE?*

A. An aromatic volatile salt, composed of sal-ammoniac, distilled with salt of tartar, softened with spirits of wine, and often scented with some essence.

Q. *What is AMBERGRIS?*

A. A substance found in the inside of a particular kind of whale ; its smell is extremely powerful.

Q. *What is it thought to be?*

A. A disease of the fish.

Q. *What is its use?*

A. It was formerly used in medicine but it is now chiefly used for a perfume.

Q. *What is MUSK ?*

A. A strong perfume, found in a bag about the size of a small egg, under the belly of an animal shaped like a deer, but without horns.

Q. *Is it a valuable DRUG ?*

A. Yes ; it is now chiefly used in medicine for spasms, convulsions, &c., the perfume being too strong to be agreeable.

Q. *Where is this animal found ?*

A. In Thibet, Tonquin, Siberia, and Bantam ; they kill the animal, cut off the bags, and tie them closely up.

Q. *Where is BANTAM ?*

A. A large town in the island of Java.

Q. *To whom does this ISLAND belong ?*

A. To the Dutch, who send a quantity of pepper from it, to all parts of the world every year.

Q. *What is CAMPHOR ?*

A. It is a white resinous juice of a tree of the bay tribe, growing in China, Japan, and the islands Sumatra and Borneo.

Q. *How is it procured?*

A. In various ways; it is found in every part of the trees, and the largest pieces are picked out with knives.

Q. *Is not CAMPHOR much used in medicine?*

A. Yes; and its strong delightful smell is so disagreeable to insects, that they always avoid it.

Q. *What is the OTTO OF ROSES?*

A. The oil of the flower whose name it bears.

Q. *How is this charming SCENT procured?*

A. A clean cask or earthen jar is filled with rose leaves, and spring water is poured upon them, just sufficient to cover them.

Q. *What is done with this vessel?*

A. It is set in the sun for two or three days, and taken under cover during the night.

Q. *What is the consequence of its exposure to the sun?*

A. At the end of the third or fourth day, small particles of yellow oil will be seen floating on the surface of the water, which in a week will have increased to a thin scum.

Q. *What is done with this SCUM?*

A. It is taken up by a little cotton tied at the end of a stick, and squeezed into a phial, and this is what is called otto of roses.

Q. *What place is noted for the ROSES of which this expensive PERFUME is made?*

A. Herat, a town in Persia, noted also for its beautiful carpets.

Q. *What is PATCHOULI?*

A. A perfume obtained from the dried branches of a plant growing in the eastern regions of Asia.

Q. *What is EAU-DE-COLOGNE?*

A. An aromatic spirit used as an agreeable addition to the toilet.

Q. *Where was it originally made?*

A. At Cologne on the Rhine, by Johann Maria Farina.

Q. *Is it not much esteemed?*

A. No less than 4,000,000 bottles are said to be made and sold annually, but a comparatively small quantity comes from Cologne.

Q. *How is the PERFUME called HUNGARY WATER prepared?*

A. By distilling fresh rosemary tops and leaves in spirits of wine.

Q. *What is MYRRH?*

A. A gum obtained by incision from a tree resembling the acacia ; it grows on the eastern coast of Arabia Felix, and that part of Abyssinia near the Red Sea ; also in the Levant, and the East Indies.

Q. *Is it not reckoned a PERFUME, as well as a most valuable medicine?*

A. Yes ; it has an aromatic smell when burnt, and a bitter taste when taken in the stomach, which it warms and strengthens.

Q. *Was it not one of the gifts offered by the wise men to our Saviour?*

A. Yes ; they presented to him gold, frankincense, and myrrh.

Q. *What did they mean by these offerings?*

A. Gold signified Christ to be a king ; myrrh being used in embalming the dead, to prevent putrefaction, signified He was to die ; and the incense represented Him to be God.

Q. *What is FRANKINCENSE?*

A. A gum, which upon the application of heat, emits a most fragrant smell.

Q. *Of what place is the TREE a native?*

A. Of Syria and Arabia.

Q. *What is OPIUM?*

A. A gummy juice obtained by incisions from the head of the papaver somniferum, or white poppy.

Q. *How is it prepared?*

A. The plant is wounded, and the juice is scraped off as it oozes out, and is put into earthen vessels, and worked about with the hand in the open sunshine.

Q. *What does this effect?*

A. It becomes of consistency sufficient to form into balls, cakes, &c., which are further dried.

Q. *From whence is it brought?*

A. It is imported from Persia, Arabia, and other warm parts of Asia, in flat cakes, covered with poppy or tobacco leaves, to prevent them from sticking together.

Q. *Is it not considered one of the most VALUABLE MEDICINES known?*

A. Yes; for it is chiefly used as a remedy for procuring sleep, and lessening pain, which it does in a most remarkable manner.

Q. *Is it not also a DEADLY POISON?*

A. Yes, if taken in large doses.

Q. *What people are passionately fond of it?*

A. The Asiatics and the Turks.

Q. *What is LAUDANUM?*

A. A liquid preparation from opium and spirits of wine.

Q. *If taken accidentally, what is the best remedy?*

A. To drink freely of acids and coffee, and not to yield to the desire of sleeping.

Q. *What is TOBACCO ?*

A. The dried leaves of a beautiful annual plant, which requires great care in the cultivation.

Q. *Where does it grow ?*

A. In many parts of North America, and in the West Indies.

Q. *From which of the islands did it receive its name ?*

A. From Tobago ; one of the Caribbees ; but very little, if any, now comes from it.

Q. *Who first introduced the use of it into England.*

A. Its introduction has been ascribed to Sir Walter Raleigh, but it was most probably first brought to England in the reign of Queen Elizabeth, by Sir John Hawkins.

Q. *What are the chief properties of TOBACCO ?*

A. It is remarkable for its acrid and narcotic qualities.

Q. *Whence comes the TOBACCO of which CIGARS and CHEROOTS are made?*

A. From Havannah and Manilla.

Q. *Where is MANILLA?*

A. It is the capital of Luzon, one of the Philippine Islands.

Q. *When did SMOKING come into fashion?*

A. In the reign of James the First, but it was not introduced at court, the king disliking the smell. He used to say, "he had no notion of men making a chimney of their mouths."

Q. *What people SMOKE this plant, and consider it a great luxury?*

A. The Germans, Dutch, and English.

Q. *What is SNUFF?*

A. Only tobacco, ground to a very fine powder and scented.

Q. *When was SNUFF introduced into France?*

A. In the reign of Henry III., it was called "l'herbe à la reine," Catherine de Medicis being very fond of it.

Q. *What is RHUEARB?*

A. The root of a tree which grows wild in Turkey in Asia, and Arabia Felix ; it is a very valuable medicine.

Q. *Is it the same plant which is used for pies and tarts in the spring ?*

A. No, that species grew wild on the mountains of Rhodope, in Thrace, and is now cultivated in kitchen gardens for the sake of the stalks.

Q. *What is CATECHU ?*

A. A valuable drug obtained from the seeds of a species of acacia.

Q. *What is MAGNESIA ?*

A. It is prepared by dissolving Epsom salts in water, and adding to the solution half their weight of potash.

Q. *How does this produce MAGNESIA ?*

A. The substance which sinks to the bottom, when washed well with water and dried, becomes a light, soft, and white powder, without taste, which is called magnesia.

Q. *What is EPSOM SALT ?*

A. It is found in masses, on rocks and stones, or dissolved in mineral

waters, at Epsom, in Surrey, and Seidlitz, in Bohemia ; the taste is bitter and unpleasant.

Q. *What other towns in England are celebrated for their MINERAL SPRINGS ?*

A. Bath, Cheltenham, Leamington, and Buxton.

Q. *Why are they called MINERAL SPRINGS.*

A. Because they are impregnated with sulphur, iron, salt, and other minerals.

Q. *What are those waters impregnated with iron or steel called ?*

A. Chalybeate springs.

Q. *Why do many people resort to these waters ?*

A. Because they contain medicinal properties, which have the power of removing or alleviating disease.

Q. *Are all these springs COLD ?*

A. Some are very cold even in warm weather, others are always warm, and others are boiling.

Q. *Where are the most celebrated BOILING SPRINGS in the world.*

A. In Iceland; they are called the Geysers, and are situated in the north of the island, where more than fifty of them may be seen.

Q. *Can you describe the GREAT GEYSER?*

A. It rises from a mound of flinty earth, deposited by the water to the height of about thirty feet, and extending about two hundred feet across. Small eruptions take place every few hours, but the great eruption occurs once in forty hours.

Q. *What is SENNA?*

A. The dried leaves of an annual plant, brought from Alexandria, and from Ghezan, in Arabia Felix, which are made up into a valuable medicinal tea.

Q. *What is PEPPERMINT?*

A. A strong aromatic oil, distilled from a British plant which grows in watery places.

Q. *Is not the well-known liquor called*

PEPPERMINT-WATER, *prepared from this plant?*

A. Yes; and it is more used in medicine than any other distilled water.

Q. *What is IPECACUANHA?*

A. The root of a tree found only in Brazil; used also in medicine.

Q. *What is PERUVIAN BARK?*

A. The bark of a tree growing in Peru; it is called by the Spaniards fever-wood.

Q. *Why?*

A. Because of its extraordinary virtue in removing all kinds of fevers and agues.

Q. *What do the INDIANS call this tree?*

A. The fuddling-tree; because it is said to intoxicate all the fish in the water, where the wood, or bark, has been steeped.

Q. *What other name is it also known by?*

A. That of Jesuits' bark, because it was first introduced into Europe by some persons of that religious order.

Q. *What king was cured by it of a fever, when Dauphin of France?*

A. Louis the Fourteenth.

Q. *In what country are BIRDS' NESTS esteemed a great delicacy?*

A. In China, where they form a considerable article of commerce.

Q. *By what kind of BIRD are these EATABLE NESTS constructed?*

A. A kind of swallow; the nest is formed of a species of sea-weed, reduced to a pulpy state, and incorporated with other substances.

Q. *For what is the TAILOR-BIRD remarkable?*

A. For the ingenuity with which she builds and conceals her nest.

Q. *Can you describe it?*

A. It is formed in a small space between a living leaf on a tree and a dead leaf gathered from the ground by the bird, which are sewed together by the fibres of a plant.

Q. *What other BIRD is equally clever?*

A. The weaver-bird of India.

Q. *Of what does this BIRD build her NEST?*

A. Of a cloth woven from the stalks of a sort of grass.

Q. *What is its form?*

A. It resembles an inverted bottle, and contains several apartments; the entrance is at the bottom.

Q. *Where is the MOCKING-BIRD found?*

A. In the American forests.

Q. *Why is he so called?*

A. From his skill in imitating the notes of other birds.

Q. *Where is the HUMMING-BIRD found?*

A. In the tropical forests of South America; it is supposed to be the smallest of all birds.

Q. *Why are they called HUMMING-BIRDS?*

A. From the sound which is produced by the flapping of their wings.

Q. *How do they build their NESTS?*

A. The outside is formed of leaves

and moss, and the inside is lined with cotton down.

Q. *What is QUININE ?*

A. A valuable preparation from Peruvian bark.

Q. *What are ALOES ?*

A. The juice of the Socotrine aloe, prepared from the leaves when fresh cut, which juice, when dried in the sun, becomes a hard substance.

Q. *Is not this also a valuable medicine ?*

A. Yes ; and this aloe grows in abundance in the island of Socotra, near the mouth of the Red Sea.

Q. *What beautiful colour do the LEAVES of the SOCOTRINE ALOE afford ?*

A. A violet, which does not require any mordant to fix it.

Q. *By what people is the ALOE dedicated to the offices of religion ?*

A. By the Mahometans and Egyptians ; and pilgrims on their return from Mecca, hang it over their doors, to show that they have performed that holy journey.

Q. *What is the BALM OF MECCA ?*

A. A costly gum resin, brought from Arabia and Turkey, of a very grateful taste and flavour, used in medicine.

Q. *What is the BALM OF GILEAD ?*

A. The dried juice of a low shrub growing in Abyssinia and Syria.

Q. *Is it not very scarce and valuable?*

A. Yes ; for the quantity of balsam yielded by one tree never exceeds sixty drops a day.

Q. *Was it not in great esteem in ancient times?*

A. Yes ; for Josephus informs us, the balsam of Gilead was one of the trees given by the Queen of Sheba to King Solomon.

Q. *What is it good for?*

A. To strengthen the stomach, and excite the spirits.

Q. *What is BALSAM OF TOLU ?*

A. It is obtained from a tree which grows to a considerable height in the province of Tolu, near the Isthmus of Panama, in South America.

Q. *How is it procured?*

A. Incisions are made in the bark of the trees, and a resinous fluid oozes out of a yellowish white colour.

Q. *Is not its smell very grateful?*

A. Yes; it resembles that of lemons, and its taste is warm and sweetish.

Q. *How is BALSAM used?*

A. Both in the form of a tincture and a syrup; it is also made into lozenges for coughs.

Q. *What is QUASSIA?*

A. A drug, the root of a tree so called from a slave of the name of Quassi, who used it with great success in the malignant fevers which prevail in Surinam.

Q. *What part of the TREE is made use of in medicine?*

A. The root, bark, and wood; it is a valuable drug in nervous diseases.

Q. *What country is it a native of?*

A. The colony of Surinam, and South America generally.

Q. *What is ASSAFÆTIDA?*

A. A valuable medicinal gum, pro-

duced from a plant resembling the cauliflower.

Q. *Where does it grow?*

A. Most plentifully on mountains in the provinces of Chorassan, and Laar, in Persia.

Q. *Is not the process of obtaining it very curious?*

A. Yes ; the top of the roots of the oldest plants must be cleared, and then the leaves and stalks are twisted together to screen it from the sun.

Q. *How long does it remain in this state?*

A. Forty days, when the top of the root is cut off, and it is again screened for forty-eight hours, when a fine juice can be scraped off, which is exposed to the sun to harden.

Q. *How often is this operation performed on the same plant, in order to gain the juice?*

A. Eight times, which occupies a period of six weeks ; it is of a most nauseous smell and taste.

Q. *What is DIGITALIS ?*

A. A medicinal preparation of the dried leaves of the fox-glove.

Q. *What is SARSAPARILLA ?*

A. The root of a plant, much valued on account of its tonic properties.

Q. *Where does it grow ?*

A. In South America ; it is imported into this country in the shape of a dried wrinkled root.

Q. *Of what is GUANO composed ?*

A. Of the soil and decomposed bodies of sea-birds ; it is much valued by the farmer on account of its fertilizing properties.

Q. *Whence do we import it ?*

A. From Peru, and from several of the African islands.

Q. *Is it not sometimes procured from the cliffs of our own coast ?*

A. Yes ; among the limestone cliffs of Yorkshire it is obtained by men who are let down dangerous precipices by means of a windlass.

Q. *What is GOULARD ?*

A. It is prepared from lead, and is

of great use in allaying inflammations.

Q. *What is BENZOIN ?*

A. A thick, whitish, resinous juice, which oozes from a tree which grows chiefly in the island of Sumatra.

Q. *Does it not form the principal ingredient of what is called FRIAR'S BAL-SAM ?*

A. Yes ; the properties of which, for healing fresh cuts, are well known.

Q. *Is it not also used in making COURT-PLASTER ?*

A. Yes ; isinglass is dissolved and laid on with a brush upon thick black sarsnet, which is afterwards washed over with a weak solution of benzoin in spirits of wine.

Q. *What countries use great quantities of GUM BENZOIN ?*

A. Where the Roman Catholic and Mahometan religions prevail, it is burned as incense in their churches and mosques.

Q. *What is STORAX ?*

A. A fragrant balsam, like benzoin,

used in medicine, and burnt as a perfume.

Q. *What is GUM GUIACUM ?*

A. The resin of a large West Indian tree, every part of which is useful ; the bark, resin, and flowers being used as medicine, and the wood is most valuable to the turner.

Q. *What is AGRICULTURE ?*

A. The art of cultivating the earth, so as to increase and preserve its fertility.

Q. *What ancient nation held the ART of AGRICULTURE in great esteem.*

A. The Roman, and many wise laws called "Agrarian Laws" were made respecting the pasture lands.

Q. *Is not much attention paid to the CULTIVATION of FARMS in the present day ?*

A. Yes, in a very high degree, and a great spirit of emulation exists among English farmers, many of whom are gentlemen of talent and property.

Q. *How are agricultural soils generally classified ?*

A. Under the following heads ; namely, sandy, gravelly or stony, clayey, chalky, alluvial, and loamy.

Q. *What are the chief* IMPLEMENTS *used by the farmer ?*

A. The plough, harrow, mattock, hoe, spade, roller, and the drill.

Q. *What is a* PLOUGH ?

A. An instrument formed on scientific principles, to delve and turn over the soil, and form furrows to receive crops.

Q. *Of what form is the* COMMON HARROW ?

A. It is a frame of wood or iron consisting of bars lengthwise and cross-wise, with iron teeth set on one side.

Q. *What is the usual extent of an* ENGLISH FARM ?

A. They vary from thirty to one thousand acres.

Q. *What are those* FARMS *called which consist chiefly of grass ?*

A. Grazing farms.

Q. *What is meant by an* ARABLE FARM ?

A. One on which corn is cultivated.

Q. *What is* HARTSHORN?

A. It was obtained only from the horns of the deer, but is now chiefly prepared from bones.

Q. *What are* CANTHARIDES, or SPANISH FLIES?

A. Insects about an inch in length, valuable as being used for blistering plasters.

Q. *From whence are they brought?*

A. We receive them in a dried state from Spain, Italy, and the South of France.

Q. *How are they collected?*

A. Very easily; for during the day they are in a torpid state, and are shaken from the trees upon a cloth spread on the ground.

Q. *How are they destroyed?*

A. When a number has been collected, they are tied in bags, and killed by being held over the steam of hot vinegar, and then dried in the sun.

Q. *Have they not a very powerful and nauseous smell?*

A. Yes ; and before being used for a blister they are pounded.

Q. *What are LEECHES ?*

A. A worm-shaped animal, found in muddy waters ; in much use in medicine for drawing or sucking blood, which they do with three sharp little teeth.

Q. *Where are they found ?*

A. In several of the rivers in the South of England.

Q. *How are they caught ?*

A. In various ways ; but one of the best is to throw bundles of weeds into the water where they are, these if taken out a few hours after, will have numbers found sticking to them.

Q. *What is ARSENIC ?*

A. A most deadly poison, found abundantly in mines in Cornwall and Devonshire ; a few grains will prove fatal ; and it has been often mistaken for salts or white sugar.

Q. *For what purpose is it used.*

A. In dyeing, calico printing, and the colouring of furs.

Q. *What is* ANTIMONY ?

A. A white brittle metal, incapable of being rolled into sheets or drawn into wire ; it is variously compounded, and used as a medicine.

Q. *What is* PRUSSIC ACID ?

A. A drug extracted from the kernels of the bitter almond, plum, and other fruits ; it is a deadly poison, a few drops having been known to cause instant death.

Q. *What is* ETHER ?

A. It is made by distilling acids with rectified spirits of wine.

Q. *What is* CHLOROFORM ?

A. A medicine made by distilling a mixture of formic acid, spirits, and water.

Q. *What use is made of* CHLOROFORM ?

A. It is used to produce insensibility, so that surgical operations may be performed without giving pain to the patient.

Q. *What is* DRAGON'S BLOOD ?

A. A red kind of resin, forced out

of the fruit of the rotang plant, when exposed by the Japanese over the steam of boiling water.

Q. *Is it not a curious plant?*

A. Yes ; it is a species of cane, and grows the length of a hundred feet, about as thick as a man's arm ; it is chiefly used in medicine.

Q. *What is CASTOR OIL?*

A. It is an oil obtained by pressing the seeds of a plant growing in both the East and West Indies.

Q. *Is it a valuable medicine?*

A. Yes ; the seeds are bruised in a mortar, afterwards tied in linen bags, and boiled in water until the oil rises to the top, which is carefully skimmed off and bottled.

Q. *What is MASTIC?*

A. A fine gum, brought from Scio, an island in the Archipelago, and the Levant ; the Turkish women chew it to make their teeth white, and burn it with other fine gums as a perfume.

Q. *What is FORMIC ACID?*

A. It is sometimes procured from an insect of the ant kind.

Q. *What is CARBONATE OF SODA ?*

A. A kind of salt found in the surface of the earth near the margin of lakes in some parts of Hungary, Italy, and Egypt.

Q. *What are these LAKES called ?*

A. Natron lakes ; the waters evaporate during the summer, leaving beds of natron, or carbonate of soda, of about two feet in thickness.

Q. *For what is it used ?*

A. In medicine, and various manufactures.

Q. *What is IODINE ?*

A. A poison of a black colour and metallic lustre, procured from burnt kelp or seaweed.

Q. *Why is it so called ?*

A. "Iodine" is a Greek word signifying violet coloured, as the vapour is of that hue.

Q. *What is PYROLIGNEOUS ACID ?*

A. An acid produced from wood, which preserves substances from decomposition.

Q. *From what WOODS is it mostly distilled?*

A. The beech and the birch.

Q. *Which are the principal METALS?*

A. Gold, silver, platina, copper, iron, lead, and tin.

Q. *Which are the most PRECIOUS of all these METALS?*

A. Gold and silver.

Q. *Which is the heaviest, hardest, and most difficult to be melted?*

A. Platina.

Q. *Which is the lightest?*

A. Tin.

Q. *Which is the most useful?*

A. Iron.

Q. *Why?*

A. Because no instrument, machine, or scarcely anything else, can be made without the help of it.

Q. *Where does GOLD come from?*

A. It is found in most hot countries; New Mexico, in North America, the East Indies, and Brazil.

Q. *What countries now furnish the largest supply?*

A. Australia, California, and South Africa.

Q. *Where is CALIFORNIA?*

A. West of Mexico in North America.

Q. *When was GOLD first found in California?*

A. It was accidentally discovered by some emigrants, on the banks of the Sacramento, in 1847.

Q. *When was it discovered in Australia?*

A. Extensive gold regions were discovered in New South Wales in 1851, and in Victoria in 1852.

Q. *Have not the AUSTRALIAN DIGGINGS been found very productive?*

A. Yes ; the annual quantity sent to England exceeds £6,000,000. Many of the diggers have realized large fortunes, and flourishing cities are rising around.

Q. *What are the lumps of GOLD found in the DIGGINGS called?*

A. Nuggets ; sometimes they weigh several pounds each.

Q. *In what kind of rocks is GOLD found?*

A. In quartz.

Q. *Is not GOLD sometimes found in the sand and mud of rivers?*

A. Yes; particularly in Guinea, in Africa, and some parts of South America.

Q. *How is GOLD obtained from the sand of rivers?*

A. It is separated by washing, and sifting.

Q. *What are the peculiar characteristics of GOLD?*

A. It exceeds all other metals in ductility and malleability, it is one of the heaviest of metals, and the air will not tarnish it.

Q. *To what length may a single grain of GOLD be drawn?*

A. Into 500 feet of wire.

Q. *Is this the article used as GOLD WIRE?*

A. No; that is usually silver wire gilded.

Q. *How is GOLD LACE made?*

A. Of a thread made of silver gilt wire twisted round yellow silk.

Q. Which are the principal GOLD MINES in Europe?

A. Those of Hungary, and Salzburg; Spain is also thought to be very rich in gold; but since the discovery of America, the mines have not been worked.

Q. Has the value of GOLD been long known?

A. Yes, from the earliest ages of the world; it is used for our coinage, and is employed principally in jewelry and gilding.

Q. What is SILVER?

A. A white brilliant metal, chiefly found in the mines of Potosi, in South America, which contain no less than three hundred shafts, and employ more than 2,000 miners.

Q. Are there SILVER MINES in any other parts of the world?

A. In Siberia, Buenos Ayres, Columbia and the United States; and in Europe there are mines in Hungary, Transylvania, Norway, and Saxony, also in the Ural Mountains.

Q. What ancient king is said to have obtained GOLD from the sands of a river?

A. Cræsus, a king of Lydia, supposed to be the richest of mankind. He obtained his wealth from the sands of the river Pactolus.

Q. When was PLATINA first introduced into Europe?

A. In 1741. The mode of purifying it, and rendering it malleable was discovered by Dr. Wollaston. For a long period its value was unknown, and when found among other metals it was separated and thrown away as useless.

Q. With what other metal is PLATINA frequently combined?

A. With palladium, rhodium, iron, gold, &c.

Q. For what is PLATINA used?

A. For the construction of crucibles in which acids are employed, for mirrors, for reflecting telescopes, and in the formation of some of the plates for galvanic batteries.

Q. *Why is it used for these purposes?*

A. Because it will neither rust nor tarnish by exposure to the air, and acids which would act upon other metals leave it uninjured.

Q. *Is not SILVER the most precious of all metals next to gold?*

A. Yes; and it is also, like gold, coined into money, and manufactured into various utensils, such as goblets, vases, spoons and dishes.

Q. *When beaten delicately fine, what is it used for?*

A. Gilding.

Q. *What is PLATINA?*

A. A white metal, not so bright as silver, found only in small grains, or scales, in the sands of some of the rivers of South America.

Q. *If it could be obtained in sufficient quantities, would it not be very valuable and useful?*

A. Yes; for its ductility is as great, if not greater, than gold or silver, and like them it will not rust.

Q. *Which are the perfect METALS ?*

A. Gold, silver, and platina.

Q. *Why are these called perfect ?*

A. Because they lose nothing in weight or value by the heat of the fire.

Q. *Does not this mean that they are not destroyed or wasted by being melted in the fire ?*

A. Yes.

Q. *Is this the case with other METALS ?*

A. No ; they are all changed by fire into a powdered kind of matter called calx.

Q. *Are not these, then, called the IMPERFECT METALS ?*

A. Yes ; for they lose by the heat of the fire, and can easily be dissolved or corroded by acids.

Q. *What do you mean by the word CORRODE ?*

A. To rust, or eat away by degrees.

Q. *What is an ACID ?*

A. Anything sour or sharp.

Q. *What is PALLADIUM ?*

A. A metal greatly resembling pla-

tina, which was discovered and brought into England from Brazil in 1803.

Q. *What is RHODIUM?*

A. Another metal associated in the same ore ; it is so called from the Greek word *rhodon*, a rose, on account of the red colour of some of its salts.

Q. *What is IRON?*

A. A well-known metal ; its value and uses were familiar to the people in the time of Moses, who tells us of swords, knives, &c., which were made in his time.

Q. *Where is IRON produced?*

A. The finest iron mines at present are those in Great Britain and France.

Q. *But is it not found in most of the countries of Europe?*

A. Yes : as well as in almost every country in the world.

Q. *Where are the best IRON MINES in England?*

A. Colebrooke Dale, in Shropshire, the forest of Dean, in Gloucestershire, and Dudley in Staffordshire, afford us a fine supply.

Q. Where are the other great IRON WORKS of Britain?

A. At Merthyr Tydvil, in Glamorganshire, Carron, in Stirlingshire, and near Glasgow.

Q. In what form is IRON usually found?

A. The iron of commerce is rarely found in a purely metallic state, but is produced from ore commonly called ironstone.

Q. What is the first process in the MANUFACTURE OF IRON?

A. Roasting the ore in kilns or furnaces, or in large heaps in the open air.

Q. What is next done?

A. It is mixed with limestone or coke and brought to the blast furnace. These furnaces rise to a great height, lighting up the country around like a small volcano.

Q. What becomes of the MELTED IRON?

A. It runs out in a liquid stream into channels formed in a bed of sand.

Q. What are these CHANNELS called?

A. The main gutter is called the "sow," and the smaller channels which branch off at right angles are called "pigs." The bars when cold are commercially known as "pig iron;" the general name for the metal in this state is "cast iron."

Q. How many sorts of IRON are there?

A. Three; forged iron, cast iron, and steel.

Q. What do you mean by FORGING IRON?

A. It is beating it out with large hammers when red hot.

Q. What effect has this on the IRON?

A. It becomes softer, and more flexible, and is very easily bent.

Q. How is it cast into cannons, pipes, pots, gates, and the numerous other forms we see it in?

A. By shapes being made of a kind of loam, or earthy substance, of the various forms wanted, and the melted liquid flows from the furnace into them.

Q. *When cold, I suppose these MOULDS are removed?*

A. Yes, and the iron is in the shape wanted.

Q. *How is WROUGHT IRON produced?*

A. From cast iron by a process called "blooming."

Q. *What is the difference between CAST IRON and WROUGHT IRON?*

A. Cast iron is very hard, very brittle, and readily fusible; wrought iron is tough, malleable, and fused with difficulty.

Q. *How is this change produced?*

A. By driving out the impurities which the cast iron contained.

Q. *What is a BAR of WROUGHT IRON worth?*

A. About £1, but when worked into horse shoes, or other useful articles it becomes worth about £2 10s.

Q. *What Emperor learnt the trade of a BLACKSMITH, in order to set an example to his subjects?*

A. Czar Peter the Great, Emperor

of Russia, in the reign of our William and Mary.

Q. At what place did he perform this laborious work?

A. At Istia, a place not far from Moscow, where he once passed a month, and also at Olonetz, situated on the side of Lake Ladoga.

Q. When he worked at the forge, what did he make the boyards, or noblemen, do?

A. He obliged them to blow the bellows, stir the fire, carry coals, and perform all the other offices of blacksmiths.

Q. Is not IRON of far more real value than GOLD?

A. Yes; for without it the earth could not have been cultivated, nor houses, cities, and ships built; and few arts could have been practised.

Q. What is STEEL?

A. It is only a more perfect kind of iron, formed by heating bars of iron with charcoal ashes and bone shavings.

Q. For what purpose is this done?

A. To render it whiter, and of a much finer and closer grain, after which it will bear a very high polish.

Q. *How does STEEL acquire its extreme hardness and brittleness?*

A. By being plunged when hot into cold water ; but if it be suffered to cool slowly it becomes soft.

Q. *What is the appearance of STEEL when heated?*

A. It assumes various beautiful tints of colour.

Q. *What are the best kinds of STEEL called?*

A. "Shear" steel, and "cast" steel. "Shear" steel is produced from the common steel again melted, and beaten with immense hammers ; "cast" steel is the shear steel again melted, poured into moulds, and rolled into sheets at the rolling-mill.

Q. *Whence comes the best IRON for making into STEEL?*

A. From the mine of Dannemora, in Sweden ; large quantities are annually shipped for the port of Hull.

Q. *What places in England are famous for the manufacture of STEEL GOODS ?*

A. London, Birmingham, and Sheffield ; in the latter more steel goods are made than in almost any other place in the world.

Q. *Where are the greatest STEEL WORKS in existence ?*

A. At Essen in Prussia.

Q. *What does the hardness of STEEL render it capable of ?*

A. Receiving a very sharp edge, which makes it particularly useful for the blades of all instruments for cutting ; such as swords, knives, razors, and scissors.

Q. *What is EMERY ?*

A. A hard heavy iron ore, found in large masses, mixed with other minerals ; the best comes from the Levant, and the isle of Naxos, in the Archipelago.

Q. *How is it prepared ?*

A. It is ground in mills into a very fine powder, and is used by lapidaries

in the cutting and polishing of precious stones.

Q. *Is it only useful to LAPIDARIES?*

A. No ; it is used in smoothing the surface of the finer kinds of glass ; by cutlers, in the polishing of iron and steel instruments : by masons, in the polishing of marble, and by numerous other artisans.

Q. *Is not the LOADSTONE or LEADING STONE, a kind of IRON ?*

A. Yes ; it is a rich iron ore, found in iron mines in Germany, England, Arabia, and Bengal.

Q. *What are its properties?*

A. It attracts iron, giving it an inclination towards the north, and even enabling a needle touched with it, to point towards the poles of the earth.

Q. *Has it any other property?*

A. Yes ; every magnet has two poles, one always pointing to the north, and the other to the south ; this circumstance has rendered it of the greatest use in navigation.

Q. *Does the NEEDLE point exactly to the true NORTH and SOUTH ?*

A. No ; it is called the magnetic north and south, and points about twenty degrees to the west of the true north.

Q. *What is NAVIGATION ?*

A. The art of directing any vessel by water, from one place to another.

Q. *Who were the earliest NAVIGATORS ?*

A. The Phœnicians.

Q. *What nation has now the largest NAVY in the world ?*

A. The English.

Q. *Has then the discovery of the MAGNET enabled sailors to venture into the great ocean, far away from any land ?*

A. Yes ; by means of the mariner's compass, they can find their way with as much ease in the midst of the ocean, as they formerly did when they never lost sight of land.

Q. *What is the MARINER'S COMPASS ?*

A. A round brass box, in which are placed a paper card, on which are marked thirty-two points, and a valuable needle or magnet which always turns to the magnetic north.

Q. *Has any one ever discovered the cause of this extraordinary property?*

A. No.

Q. *What other GUIDES do SAILORS need?*

A. A Nautical Almanac, and a chart representing rocks and shoals as well as places.

Q. *By whom were FLAGS first used for SEA-SIGNALS?*

A. By James Duke of York in 1665.

Q. *What are SOLDIERS called who fight on SHIP-BOARD?*

A. Marines.

Q. *What is COPPER?*

A. A red-coloured metal, and the most sonorous of all metals.

Q. *Where is it found?*

A. It is found in various parts of the world; the largest and best mines are in Cornwall, and the Isle of Anglesea.

Large supplies come from Cuba, Chili, and Australia.

Q. In what other parts of America is it found?

A. Near Lake Superior in North America, and Brazil in South America, where very large masses have been found.

Q. Is not COPPER one of the earliest known of the METALS?

A. Yes; it was extensively mined and smelted by the ancient Greeks, who used it in the fabrication of their domestic utensils and implements of war.

Q. From whence did the Greeks obtain their supply?

A. From Cyprus in the Mediterranean Sea, from which island the name is derived.

Q. What is COPPER principally used for?

A. For coinage, sheeting the bottoms of ships to protect them from worms, for boilers, and many kitchen utensils. It is also used for lightning conductors.

Q. What is a LIGHTNING CONDUCTOR?

A. A rod fixed in the earth, running up the whole height of the building, and rising in a point above it.

Q. What is its use?

A. When the lightning cloud passes over the building, the metal rod draws off the electricity and conveys it to the earth.

Q. How many kinds of COPPER are there?

A. Three; the common, the rose copper, and the virgin copper.

Q. Do all these three kinds come from the same MINE?

A. Yes; the difference between them is in the preparation.

Q. Is not COPPER sometimes mixed with other METALS?

A. Yes; it forms several compound or mixed metals.

Q. What is BELL-METAL?

A. Copper mixed with a large quantity of tin; it is so called from bells

being made of it, and is very hard and sonorous.

Q. When were BELLS first used?

A. In the time of Charlemagne.

Q. What countries are remarkable for their GIGANTIC BELLS?

A. China and Russia. In Moscow a bell was founded of such gigantic proportions that it was never suspended.

Q. What are the WEIGHTS of the largest BELLS in England?

A. Big Ben, at Westminster, weighs 35,000 lbs. ; the great bell at York, 28,000 lbs. ; and the great bell of St. Paul's, which is only tolled on the death of persons of the highest distinction, 8400 lbs.

Q. Describe the method of CASTING BELLS ?

A. A mould is prepared with a mixture of plaster of Paris and brickdust, a layer of wax or clay is then spread over the inside as thick as the metal is intended to be.

Q. How do they next proceed?

A. The mould is closed, and the hollow within filled up with plaster, forming what is called the "core." The layer of wax is then removed, and the liquid metal poured into the vacant space.

Q. *What is BRONZE?*

A. Copper mixed with a less quantity of tin ; this composition must have been known in very early times.

Q. *Why?*

A. Because it is mentioned in the Old Testament ; and also we learn from Homer, that in the Trojan war the combatants had no other armour than what was made of bronze.

Q. *Is not this a little doubtful?*

A. Perhaps so, as the Greek word "chalkos" frequently signifies brass, and it is very likely that the word, as used by them, meant iron as well as brass.

Q. *What is PINCHBECK, or PRINCE'S METAL?*

A. Copper mixed with zinc ; it is nearly the same colour as gold, and

is used for common watch-cases, &c.

Q. *Why is it called* PRINCE'S METAL?

A. From Prince Rupert, the inventor.

Q. *Who was* PRINCE RUPERT?

A. The son of Frederick V. elector palatine, by Elizabeth daughter of James I. ; this prince passed the latter years of his life in making experiments in chemistry, engraving, and mechanics.

Q. *What is* ZINC?

A. A metal of a brilliant white colour, with a shade of blue, extremely useful and valuable, as it mixes well with most other metals.

Q. *Where is* ZINC *found?*

A. In Flintshire, Derbyshire, Cumberland, and Germany.

Q. *How is it separated from the* ORE?

A. It is roasted and mixed with charcoal, and put into a furnace, the vapour of the zinc rises in a cloud, and meeting with cold water is chilled ; it

is then distilled downwards through a tube as solid metal.

Q. *What are the ORES called from which ZINC is obtained?*

A. "Calamine," a native carbonate; and "blend," a native sulphurate.

Q. *What is COBALT?*

A. A reddish-gray brittle metal, found in Saxony.

Q. *For what is it used?*

A. Principally to give a permanent blue colour to glass, and to enamels on metal, porcelain, and earthenware.

Q. *What is VERDIGRIS?*

A. It is that green stuff so often seen on dirty copper, and may be called its rust.

Q. *Is it not a rank poison?*

A. Yes; and this renders copper vessels very dangerous, unless kept perfectly clean.

Q. *Where is there a large MANUFACTORY of VERDIGRIS?*

A. At Montpellier, in the South of France, the husks of grapes are placed

between copper plates, and the acid soon collects the rust.

Q. *What is then done with it ?*

A. It is scraped off as it collects ; afterwards dried, and put in bags or casks for sale.

Q. *What is it principally used for ?*

A. For dyeing a fine black, mixed with logwood ; also, for giving a beautiful green to porcelain, and for green paint, &c., &c.

Q. *What sort of metal is LEAD ?*

A. It is a coarse, soft, impure metal, but a very useful one.

Q. *Whence have we LEAD ?*

A. Great Britain possesses the most important lead mines in the world ; the best known are in Flintshire, Derbyshire, Cornwall, Devonshire, Northumberland, and Durham.

Q. *When were LEAD MINES first worked in Britain ?*

A. At the time the Romans held sway in our island.

Q. *For what purpose is it generally used ?*

A. Houses and churches are sometimes covered with lead; gutters, pipes, and cisterns are also made of it.

Q. *Is not this metal of a very poisonous quality?*

A. Yes; so much so, that in the neighbourhood where it is dug, neither dog, cat, nor fowl can be kept.

Q. *What is WHITE LEAD?*

A. It is made by holding thin plates of lead over heated vinegar.

Q. *What does this process cause?*

A. The acid arising from the vinegar corrodes the lead, and converts it into a heavy white powder.

Q. *By whom is WHITE LEAD used?*

A. By house painters, who mix it with oil, to thicken and dry their paints.

Q. *Is not WHITE LEAD very prejudicial to health?*

A. Yes, being a slow poison.

Q. *What is SUGAR OF LEAD?*

A. White lead dissolved in very strong vinegar; it is used by dyers

and calico printers, also by painters as a drier for their paints.

Q. *What is MASSICOT ?*

A. An oxide of lead, used as yellow paint.

Q. *What is LITHARGE ?*

A. Another oxide of lead used for glazing earthenware.

Q. *What is RED LEAD ?*

A. It is prepared from massicot ; it is of a brilliant red colour inclining to orange.

Q. *What is TIN ?*

A. A metal of a whitish colour.

Q. *What county has been long noted for producing it ?*

A. Cornwall ; so long as 700 years before the birth of Christ, the Phœnicians traded to this country for that article.

Q. *Who were the PHŒNICIANS ?*

A. The inhabitants of the celebrated country of Phœnicia, in Asia, now called Syria ; Tyre and Sidon were the capital towns of this country.

Q. *What celebrated QUEEN left her*

wicked brother Pygmalion, King of Tyre, and founded the celebrated city of Carthage?

A. Queen Dido.

Q. *Are the uses of TIN very considerable?*

A. Yes ; its freedom from rust renders it very valuable for all vessels for the purpose of cooking.

Q. *Are these vessels usually made of SOLID TIN?*

A. No ; they are generally made of iron coated with tin.

Q. *Can you describe the process by which they are TINNED?*

A. The inside is first rubbed over with ammonia, the liquid tin is then poured into the vessel, which is shaken about until every part is coated.

Q. *What is AMMONIA?*

A. A volatile gas produced from animal matter subjected to heat in iron cylinders.

Q. *What is BLOCK TIN?*

A. It is tin melted in a furnace and poured into moulds of stone of 320

pounds weight, which are stamped with the impression of a lion, the arms of the duchy.

Q. *What duty does it pay?*

A. Four shillings per hundred-weight.

Q. *Who receives this fine revenue?*

A. The Prince of Wales, as Duke of Cornwall, which is one of his titles.

Q. *What is SOLDER?*

A. A strong cement formed by melting lead and tin into a liquid, used for joining the different parts of metals together.

Q. *What is PEWTER?*

A. A composition made of lead and tin.

Q. *What is its use?*

A. It was formerly much used for dishes and plates; but earthenware, which is much cleaner and pleasanter, has almost rendered it useless, except for the pots of the publicans.

Q. *What is TINFOIL?*

A. It is composed of two parts tin,

and one part lead, beaten with hammers until extremely thin.

Q. For what is it used?

A. For coating the inside of boxes, and also for packing various articles to preserve them from injury by the air.

Q. How are patterns printed on tin plates for fusee boxes, &c.?

A. By means of lithographic rollers and stones, when the plates are in a heated state.

Q. What is BRASS?

A. A compound metal made of copper, zinc, and the calamine stone, which renders it yellow and hard.

Q. How may the colour of BRASS be much improved?

A. By being varnished or lacquered with a solution of cream of tartar.

Q. What is CALAMINE STONE?

A. A stone found plentifully in England, Holland, and Germany.

Q. How is it procured?

A. It is dug out of the ground, roasted five or six hours, passed through

a sieve, ground in a mill, and in this state is sold.

Q. Where is the great demand for it?

A. At Birmingham, for the brass foundries in that town.

Q. Where is the finest BRASS manufactured?

A. At Geneva, a fortified town in a canton of the same name, in Switzerland.

Q. What is QUICKSILVER, or MERCURY?

A. An imperfect metal, resembling melted silver, of great use in manufactures and medicine.

Q. Where is it found?

A. The most productive mines are those of Almaden, near Cordova in Spain, of Idria in Austria, and of Huancavelica in Peru.

Q. Were not the mines of Almaden known to the ancients?

A. It is recorded by Pliny that the Greeks imported the ore from Spain 700 B.C., and that Rome in his time

annually received £700,000 from the same province.

Q. *What is the ore called from which MERCURY is obtained?*

A. Cinnabar; the ore occurs in veins, consisting of mercury mineralized with sulphur, and is of a red colour.

Q. *What does MERCURY form, combined with tin?*

A. The silvering of looking-glasses.

Q. *For what other purposes is MERCURY used?*

A. For amalgamation with other metals so as to extract them from their ores; it is also useful in its fluid form in barometers and thermometers, and in chemical processes.

Q. *Is it not sometimes used in medicine?*

A. Yes, in several forms; the whitish insipid powder called calomel is produced from corrosive sublimate and mercury.

Q. *What is VITRIOL?*

A. A mineral salt; there are three sorts of vitriol, green, blue, and white.

Q. *How is BLUE VITRIOL formed?*

A. By a combination of copper; it is used by artists and manufacturers, and is employed in dyeing.

Q. *Is not the beautiful grass-green colour of the chemists' shops, made from BLUE VITRIOL?*

A. Yes: and fowling pieces, and tea-urns are browned by washing them with a preparation of vitriol.

Q. *What is WHITE VITRIOL?*

A. It is formed by a combination of sulphuric acid and zinc.

Q. *What is it used in?*

A. Medicine; and varnishers and dyers use great quantities of it, to render deeper the colours produced by madder, cochineal, &c.

Q. *What is OIL OF VITRIOL?*

A. A powerful acid which is composed of sulphur and oxygen.

Q. *What is NICKEL?*

A. A metal associated in its natural state with cobalt. It is of a white colour, and very difficult to melt; with

copper and zinc it forms the alloy called German silver.

Q. *Where is it found?*

A. In Westphalia, and other parts of Europe, and in some of the mines of Cornwall.

Q. *What is BISMUTH?*

A. A brittle metal of a reddish or yellowish-white colour. It is very hard, but easily fusible.

Q. *For what is it used?*

A. In making solder and printers' type.

Q. *What do you mean by FUSIBLE?*

A. The capacity of being melted, or liquefied by fire.

Q. *What is TELLURIUM?*

A. A metal having a silver-white colour, and considerable brilliancy. When heated before the blow-pipe, it burns with a blue flame, emitting a white smoke.

Q. *What is CHROMIUM?*

A. A brittle metal of a whitish colour. It is used in coloured glass

making and in enamelling, as a rich, strong, and durable pigment.

Q. *What kind of metal is URANIUM?*

A. It is of an iron-gray colour, of considerable lustre, and when heated to redness takes fire.

Q. *What is BORAX?*

A. A salt of a brownish-gray colour, and a sweetish taste, brought from Thibet, in the East Indies.

Q. *Was not the ART of REFINING it kept for a long time a secret by the Dutch and Venetians?*

A. Yes; its uses are numerous; it is employed in making the finest glass, and jewellers use it for the better soldering of gold and silver; it is also used in medicine.

Q. *What is POTASH?*

A. It is a salt, or alkali, found in vegetable substances, obtained by burning them.

Q. *Why is it called POTASH?*

A. From its having formerly been prepared in large iron pots.

Q. *For what purpose is it used?*

A. In many arts and manufactures ; in scouring, washing, bleaching, dyeing, glass-making, &c.

Q. *What is PEARL ASH ?*

A. It is only potash burnt red hot, which renders it whiter and more pure.

Q. *What is FULLER'S EARTH ?*

A. A well-known clay, of a greenish-yellow colour, very valuable for its property of taking grease out of woollen and other cloths.

Q. *What country is famous for it ?*

A. England ; and this enables us to bring our broadcloths to such perfection ; as no other country produces fuller's earth equal to it.

Q. *Might it not be used in most instances as a substitute for SOAP ?*

A. Yes.

Q. *What is PIPE CLAY ?*

A. It is a fine common clay ; tobacco pipes are made of it, by casting it into moulds, and it is used for many domestic purposes.

Q. *Is it not the principal ingredient*

of the common yellow or KITCHEN WARE?

A. Yes.

Q. *What is* SODA?

A. It is a salt, or alkali, like potash, obtained from sea-water, and different kinds of plants that grow on the sea-shore.

Q. *Is it not sometimes called* BARILLA?

A. Yes; this is the Spanish name for it: it is principally used in making glass and soap.

Q. *What is* SOAP?

A. It is made of soda, tallow, or oil, mixed with other things, and is prepared by boiling.

Q. *Of what is* WHITE CURD SOAP *made?*

A. Of olive or palm oil and soda.

Q. *How is* SOFT SOAP *made?*

A. From potash and fish oil.

Q. *How are* FANCY TOILET SOAPS *prepared?*

A. From lard and potash, with olive

or palm oil variously coloured and scented.

Q. *What is GLYCERINE?*

A. A sweetening substance driven out of oil or fat by boiling it with potash or soda.

Q. *What is PHOSPHORUS?*

A. A substance of the colour and appearance of wax ; it is so combustible that it takes fire in the air, emitting a white smoke, having the smell of garlic, and appears luminous in the dark.

Q. *What is the signification of the word PHOSPHORUS?*

A. It is derived from two Greek words which mean "to carry light."

Q. *How is it obtained?*

A. It is commonly prepared from bones heated to a white heat.

Q. *For what is PHOSPHORUS used?*

A. It forms the ignitable part of lucifer matches, and many thousands of pounds are used in London annually in that manufacture.

Q. *When, and by whom, were LUCIFER MATCHES invented?*

A. In 1829, by Mr. J. Walker, chemist, Stockton-on-Tees, and improved later by Sir W. Congreve.

Q. *Is not PHOSPHORUS bright and shining in the dark, when exposed to the air?*

A. Yes, and when melted should be kept under water, for fear of its catching fire.

Q. *What does COMBUSTIBLE mean?*

A. That which easily takes fire.

Q. *What is MANGANESE?*

A. A dull whitish metal, very hard, brittle, and difficult of fusion.

Q. *What is ELECTRO-PLATING?*

A. The art of covering common metals with a coating of gold or silver.

Q. *What is ZINCONIA?*

A. A very heavy species of mineral earth.

Q. *Where is it found?*

A. In the rivers of Ceylon; also in different species of gems.

Q. *What is ASBESTOS ?*

A. It is a silvery white mineral, of silky, long, slender filaments, which is found in mountainous countries abroad, and in Anglesea and Scotland.

Q. *What is the name derived from ?*

A. "Asbestos," a Greek word, which signifies "inconsumable," or not capable of being burnt.

Q. *What was it called by the ancients ?*

A. Amicanthus ; they made it into a kind of cloth, in which they burned the bodies of their dead, and thus they were enabled to collect the ashes without mixture.

Q. *How is this curious CLOTH cleaned when greased, or dirty ?*

A. By throwing it into a clear, bright fire, the stains will burn out, and the cloth become of a dazzling whiteness.

Q. *Did not the Romans purchase this CLOTH at an enormous expense ?*

A. Yes, and Pliny tells us he had

seen table-cloths, towels, and napkins made of it.

Q. *What is it now used for?*

A. Chiefly small articles, by way of curiosity ; such as caps, gloves, purses, girdles, &c.

Q. *What is LAVA ?*

A. The melted compound of minerals and other matter that flows from burning volcanoes.

Q. *Name the most celebrated VOLCANOES in Europe.*

A. Etna, in Sicily ; Vesuvius near Naples ; and Hecla, in Iceland.

Q. *What ancient cities were destroyed by an eruption of MOUNT VESUVIUS ?*

A. Herculaneum and Pompeii, A.D. 79.

Q. *For how long a period did the remains of these cities lie buried ?*

A. For more than sixteen hundred and fifty years.

Q. *How were they then discovered ?*

A. Some peasants digging for a well

came upon some ancient remains, which at once excited much attention.

Q. *What VOLCANIC ISLAND is called the "Lighthouse of the Mediterranean?"*

A. Stromboli, one of the Lipari Islands.

Q. *What is PUMICE STONE?*

A. A light porous mineral, chiefly brought from the neighbourhood of volcanoes.

Q. *What is it used for?*

A. It is employed for smoothing the surface of wood, leather, metal, stones, glass, and other substances, and consequently is an article of considerable trade.

Q. *From what places is it exported in great quantities?*

A. From the Lipari Islands, to the north of the island of Sicily; they are all of volcanic origin.

Q. *What is ASPHALTUM?*

A. A mineral pitch formed by the decomposition of vegetable matter.

Q. *Where is it found?*

A. In great abundance in Neufchâtel, and among the Jura Mountains. There are also great quantities near the Dead Sea.

Q. *How is it prepared for use?*

A. The mineral is melted, and poured into moulds so as to form cakes.

Q. *For what purpose is it used?*

A. In combination with gravel it forms a very hard cement, and is employed in paving the streets of great cities.

Q. *Was not ASPHALTUM much used by the ancients?*

A. They generally used it as mortar in their buildings, and the Egyptians used it in their process in embalming. It also constituted the chief material of the Greek fire.

Q. *What is MARBLE?*

A. A kind of stone, dug out of pits, or quarries, very hard, compact, and firm; capable of being most highly polished.

Q. Are there not various kinds of MARBLE?

A. Yes ; some are white, or black, others variegated with stains, clouds, waves, and veins, but all opaque.

Q. What is the meaning of OPAQUE?

A. Not transparent, dark.

Q. What countries in Europe are famous for their FINE MARBLES?

A. Greece, Italy, Spain, France, and Great Britain ; the black and the pure brilliant white marble, which come from Carrara, are most highly valued.

Q. Where is CARRARA?

A. A town of Italy, on the Avenza, two miles from the Mediterranean.

Q. Is not the PARIAN MARBLE thought to be the purest and most lasting?

A. Yes; and it is in consequence used for the finest statues in marble.

Q. From whence is it procured?

A. From Paros, an island in the Archipelago ; Phidias and Praxiteles, two celebrated ancient statuaries, were natives of it.

Q. *What fine Grecian statue, made of PARIAN MARBLE, is still an object of wonder and delight?*

A. The Medicean Venus.

Q. *What English counties produce very beautiful MARBLE?*

A. Derbyshire, Devonshire, and Westmoreland; also, the Isle of Sky and Sutherland, in Scotland, and numerous other places.

Q. *What is MALACHITE?*

A. A carbonate of copper, found in the northern part of the Russian empire.

Q. *What is its appearance?*

A. It is a bright green, variegated like marble, and is susceptible of a brilliant polish.

Q. *What is it useful for?*

A. It is much prized by the lapidary for ornamental purposes.

Q. *What is meant by SILEX?*

A. The earth which constitutes the bulk of the primitive rocks, as flint, rock crystal, agate, and other stones.

Q. *What is VERDE-ANTIQUE?*

A. A beautiful green marble, found only in Egypt ; if it ever came from Italy, the quarries are not now known.

Q. *What is PORPHYRY ?*

A. It is a beautiful stone, found in quarries, or beds, of considerable magnitude.

Q. *Where ?*

A. The principal quarries of porphyry are in Egypt ; it is also found in various parts of Europe.

Q. *Are there not many beautiful and splendid works in PORPHYRY ?*

A. Yes ; obelisks, statues, and columns ; it can be polished as highly as marble, but it is so hard, that the expense of working it has caused it to be much neglected.

Q. *Is not the term PORPHYRY applied now to other rocks ?*

A. Yes ; it is employed now by geologists to denote all rocks which contain imbedded crystals distinct from their mass.

Q. *What is QUARTZ ?*

A. A hard substance, of a white or gray colour, somewhat transparent.

Q. *What is SAND ?*

A. Small rounded grains of decomposed quartz, granite, and other rocks.

Q. *For what is it used ?*

A. For making mortar, and other building purposes ; in the preparation of moulds for casting metals ; also in the manufacture of glass.

Q. *What is FELSPAR ?*

A. A crystallized mineral compound, used in the manufacture of earthenware.

Q. *What is the signification of the word SPAR ?*

A. Crystallized salts of lime ; but the term is applied to various minerals which have a shining lustre.

Q. *Are not some of these MINERALS of great beauty ?*

A. Yes ; but in general their softness and frangibility prevent them from being much used.

Q. *What is BASALT ?*

A. A coarse-grained blackish stone, supposed to be of volcanic origin.

Q. *What magnificent specimen of BASALTIC COLUMNS exists in the Isle of Staffa?*

A. Fingal's Cave, which in general appearance resembles the rich ornaments of some grand Gothic building.

Q. *Does any other specimen exist in the British Isles?*

A. The Giant's Causeway, on the coast of Antrim, in Ireland.

Q. *What is SERPENTINE?*

A. A rock of a greenish colour, found in some parts of Germany, Cornwall, and Scotland.

Q. *Why is it so called?*

A. From the resemblance which its spots and stripes bear to the skin of a serpent.

Q. *What is SIENITE?*

A. A compound, granular, grayish-tinted rock, named from Syene, in Upper Egypt.

Q. *What is ALABASTER?*

A. It is a species of limestone, found

in masses, hanging like immense icicles from the roofs of caverns.

Q. *Where is it found?*

A. In most caverns in every country; those of Derbyshire are well known.

Q. *Which is the most celebrated CAVE of this kind?*

A. That of Antiparos, in the Grecian Archipelago.

Q. *What is it used for?*

A. To cut into vases, statues, tables, boxes, and other beautiful ornamental things.

Q. *But is there not another kind of ALABASTER, called GYPSUM, which is made into chimney-pieces, columns, busts, vases, lamps, &c.?*

A. Yes; this gypsum is found in Cheshire, Derbyshire, and in many parts of the continent; but that which is brought from Italy and Spain is the best.

Q. *Was it not used by the ancients for windows?*

A. Yes; as it admitted a soft and

pleasing light, without being transparent.

Q. *What is PLASTER OF PARIS ?*

A. It is alabaster heated till it falls into a soft white powder, which, when mixed with water, forms a paste called plaster of Paris.

Q. *What is it employed for ?*

A. In the making of casts, statues, &c.; it is of a beautiful white colour, but very brittle.

Q. *What is JASPER ?*

A. A variegated, very hard stone, with stripes and shades of yellow, red, green, and white, with black dots.

Q. *What is it principally used for ?*

A. It is made into vases, snuff-boxes, and other ornaments, as it will bear a very high polish ; also for pillars in very grand buildings.

Q. *What COUNTRY has very fine quarries of it ?*

A. Spain.

Q. *Where is it found ?*

A. In every quarter of the world ;

Egyptian jasper is found near Suez, in Egypt; Siberia produces a most beautiful kind for ornaments; and Tokay in Hungary, and Constantinople in Europe, produce it.

Q. *What is LAPIS LAZULI?*

A. A stone of a beautiful dark colour, with dots, which look like golden veins or spots.

Q. *Where is it chiefly found?*

A. In Persia, Natolia, China, Siberia, and Tartary; in Europe it has only been discovered in Germany, and among the ruins of Rome.

Q. *What is JET?*

A. A black opaque mineral, found in detached masses in several countries of the continent; it is often cast on the shores of England, in Norfolk and Yorkshire.

Q. *What is it valuable for?*

A. Trinkets, such as ear-rings, necklaces, &c.; and in Roman Catholic countries, great quantities are used for rosaries and crosses.

Q. *What is the ONYX?*

A. A species of agate, marked with bands of different colours.

Q. *Where is it found?*

A. It is generally brought from Arabia.

Q. *How were ONYX STONES used by the ancients?*

A. They carved curious devices upon them, called cameos.

Q. *What does the term CAMEO signify?*

A. It is a word of Oriental origin, but the term is applied to stones having figures raised in relief upon the surface.

Q. *What is the SARDONYX.*

A. It is a stone much resembling the onyx, of an orange colour, striped with blue, red, and brown.

Q. *What is the HELIOTROPE, or BLOODSTONE?*

A. A deep green stone, capable of a very high polish, it is often variegated with blood-red spots and stripes.

Q. *Where is it found?*

A. In many parts of the East, in Siberia, Iceland, and the Hebrides.

Q. *Among what people is the HELIOTROPE in much request?*

A. Among the Chinese, who use it as an ornament to their girdle-clasps.

Q. *What is AGATE?*

A. The name of agate is derived from the river Achates, in Sicily, near which these stones were found in abundance by the ancients.

Q. *Where are they now found?*

A. In Scotland, Saxony, and Hungary; and they are also brought from China, and the East Indies.

Q. *What are they used for?*

A. In jewellery, for seals, &c.; also for magnificent cups, handles for splendid knives and forks, hilts for swords, and the tops of snuff-boxes.

Q. *What are PETRIFACTIONS?*

A. Substances immersed in water strongly impregnated with lime, which has the power of covering anything laid in it with a strong coat.

Q. *What well in England is celebrated for these curiosities?*

A. The dropping well at Knaresborough, in Yorkshire.

Q. *Is there not a curious specimen in the British Museum?*

A. Yes; it is a human skull completely incrusted with stone, which was found in the River Tiber.

Q. *What is COAL?*

A. A well-known black mineral, principally obtained from the neighbourhood of Newcastle-upon-Tyne, Sunderland, and Whitehaven.

Q. *What is the probable origin of COAL?*

A. It consists of the remains of large forests which have at some distant period been overturned by convulsions of nature, and long buried in the earth.

Q. *Are not COAL MINES of great depth?*

A. They vary from fifteen yards to more than five hundred: the deepest known is at Monktonwearmouth in

Durham, which measures five hundred and thirty yards in depth, and extends for some distance under the sea.

Q. How does COAL enable us to carry on our manufactures?

A. Nearly all our machinery is kept in motion by steam, which could not be obtained without a large supply of coal.

Q. Who was the first to apply the power of STEAM to the improvement of machinery?

A. James Watt, who from observing its great force in lifting up the lid of a tea-kettle was led to apply it to many practical purposes.

Q. Who was the inventor of the STEAM ENGINE?

A. Thomas Newcoman, a locksmith of Devonshire, who lived in the reign of Queen Anne.

Q. When was STEAM first applied for travelling purposes?

A. In 1807, when steam vessels were used on the Hudson River in the United States; they were introduced

into Great Britain about five years afterwards.

Q. *Where was the first STEAM VESSEL seen in Britain?*

A. On the River Clyde, in Glasgow.

Q. *At what rate will a STEAM VESSEL move?*

A. About ten or twelve miles an hour.

Q. *Have not several monster STEAMERS been constructed during the reign of Queen Victoria?*

A. Yes ; the Great Western, which accomplished the voyage to New York in about thirteen days ; the Himalaya, a screw steamer, and the Great Eastern, which was the largest ever built.

Q. *At what speed does a LOCOMOTIVE ENGINE travel?*

A. About thirty-five miles in an hour.

Q. *What does the word LOCOMOTIVE signify?*

A. It is derived from two Latin

words signifying the power of changing place.

Q. *When was the first RAILWAY opened in England?*

A. Carriages were drawn by locomotive engines at Newcastle in 1824, but the first railway for passengers was opened between Liverpool and Manchester, in 1830.

Q. *Which is the most important RAILROAD in Great Britain?*

A. That between London and Birmingham, in connection with Manchester and Liverpool, and also with Leeds, York, Darlington, and Edinburgh.

Q. *Can railway carriages be propelled by any other power than that of STEAM?*

A. An atmospheric railway was invented by which the carriages were driven forward by the air at the rate of thirty or forty miles an hour.

Q. *Are ATMOSPHERIC RAILWAYS now in use?*

A. No; they have been abandoned

in consequence of being so frequently out of order.

Q. How are TRAMWAYS formed?

A. Lines of rail are sunk in the road on which the wheels of the cars run.

Q. How are the TRAMWAY CARS drawn?

A. Usually by two horses; they sometimes carry fifty or sixty passengers.

Q. Do not foreigners imagine that our great wealth arises from the abundance of COALS we possess?

A. Yes; as they afford the great means of carrying on all our valuable manufactures.

Q. When were COALS generally adopted as fuel?

A. Not till the beginning of the reign of Charles I., though they are mentioned in the reign of Henry III.

Q. Are not the miners who work in the collieries subject to dreadful accidents?

A. Yes; the greatest danger arises

from the foul air of the pit, mixing with the common air, as then, upon approach of a lighted candle, or any other flame, it explodes like gunpowder.

Q. What has Sir Humphrey Davy invented, to prevent the loss of so many valuable lives?

A. The safety lamp, which is formed of such fine wire, that whilst it gives light, it will not cause the gas to explode.

Q. What is GAS?

A. A sort of inflammable air, found in many substances, but most plentifully in coal.

Q. Does it not produce a very brilliant light?

A. Yes, upon a candle or match being applied to it; and it is now in consequence generally used in our lamps, instead of oil.

Q. How do they convey it?

A. By laying iron pipes from the reservoirs, in which it is made, along the streets, under ground, and from

these large pipes, small ones are conveyed into lamp-posts and houses.

Q. How is the GAS with which our streets are illuminated manufactured?

A. A large fire is kindled, over which is placed a retort having a door at one end, and a chimney at the other ; into this the coals are thrown.

Q. What is next done?

A. The door is closed, and the coals dissolve, a column of smoke arises, which consists of liquefied tar, gas, and water ; these substances pass together into the chimney, and are conveyed into another retort containing water.

Q. Does the GAS then pass into the pipes?

A. No ; it passes through two or three processes, until it is thoroughly purified, when it is conveyed into a still larger vessel.

Q. What is the building where GAS is prepared called?

A. A gasometer.

Q. What is a GAS-METER ?

A. An instrument with an index

placed at the entrance of a building where gas is burnt, to show how much has passed through the pipe.

Q. How were the streets of large cities and towns lighted in former times?

A. The earliest method was by links or torches carried by boys.

Q. What other method was used?

A. A cresset or fire-pan was sometimes set on a pole in the middle of the street.

Q. When did OIL LAMPS come into use?

A. About 1762.

Q. In what town of England was an illumination of GAS first seen?

A. In Birmingham, in 1802; from that time forward the new light made rapid progress.

Q. What is the BUDE LIGHT?

A. A method of using coal-gas, invented by Mr. Goldsworthy Gurney; it is so called from the name of his residence in Cornwall where it first became known to him.

Q. *How is it produced?*

A. By combining a stream of oxygen gas with coal gas.

Q. *Is it not of great brilliance?*

A. It is considered that the Bude-light will give twelve times more light than the flame of common gas.

Q. *What is CANNEL COAL?*

A. It is a peculiar coal, which gives a brilliant light, like a candle, found in the neighbourhood of Wigan, in Lancashire.

Q. *Does not this COAL afford the best GAS?*

A. Yes.

Q. *What is GAMBOGE?*

A. A vegetable gummy juice, of a most beautiful yellow colour, chiefly brought from Cambodia, in the East Indies.

Q. *What is its principal use?*

A. It was formerly used in medicine, but its great value is in painting.

Q. *What is VERMILION?*

A. A valuable red colour, formed of

mercury and sulphur, melted together, and heated to redness.

Q. *What is ULTRAMARINE ?*

A. The brilliant blue colour so much esteemed by painters, and which we see so much used in the draperies of fine splendid pictures.

Q. *What is it made from ?*

A. Lapis lazuli ; small pieces of which are chosen, containing the most of this brilliant blue, which is burned or calcined to a fine powder, and made into a paste, with wax, linseed oil, &c.

Q. *Is this all the preparation ?*

A. No ; it is afterwards separated from these substances by washing, and the powder is prepared with great trouble and attention.

Q. *Does it not last fresher and better than any other colour ?*

A. Yes ; for that sweet colour is often seen quite bright, when all the rest in a picture are faded.

Q. *What is UMBER ?*

A. A paint of a brown colour, com-

pounded from a kind of iron ore, found in beds in the island of Cyprus.

Q. *What is BLACK CHALK ?*

A. It is a soft, earthy substance, valuable to crayon painters, and other artists.

Q. *Where is it found ?*

A. Great quantities are brought from France, Spain, and Italy; the best come from the latter place.

Q. *How is it prepared ?*

A. It is made into pencils, and they should be kept in a moist place.

Q. *What is SHAGREEN ?*

A. A kind of grained leather, prepared from the hides of asses and horses, but the proper shagreen is made from the skin of the shark, or spotted dog-fish.

Q. *What place is famous for the first of these manufactures ?*

A. Astracan, a city of Tartary, on the River Wolga, of great trade and importance to the Russians.

Q. *But from what place do we get the real SHAGREEN ?*

A. The best comes from Constantinople, but we have it from Tunis, Tripoli, and Algiers, in Africa.

Q. *What renders it valuable?*

A. It makes a strong covering for cases, books, &c.

Q. *Is not the skin of the ass useful for many other things?*

A. Yes ; on account of its hardness and elasticity, it is made into heads of drums, leaves for pocket-books, &c. The ass is much valued in Spain.

Q. *What are the most useful TREES for cultivation?*

A. The oak, elm, ash, beech, poplar, walnut, chestnut, and fir.

Q. *What is the OAK useful for?*

A. Every part of this noble tree has its use : the trunk is sawed into planks, to build ships and houses.

Q. *Why is OAK particularly used for ship-building?*

A. Because no other wood is so durable in water.

Q. *Is not the BARK useful?*

A. Yes ; the tanner and dyer could

not do without it, to whom also the very sawdust is serviceable.

Q. *Are not the ASHES of it even useful?*

A. Yes ; to cleanse and purify wine, and for mixing with hard water to soften it, for washing.

Q. *What are the ROOTS suitable for?*

A. Handles for hammers, knives, &c.

Q. *Is the FRUIT called the ACORN, fit to be eaten?*

A. Yes ; it supplies food for deer, and hogs ; and when bruised, poultry will thrive upon it.

Q. *Did not man, before the cultivation of CORN, feed upon ACORNS?*

A. It is so said, for with the ancient Britons they were in great request, and in times of scarcity, they would still prove a good substitute.

Q. *Is not OAK BARK valuable in medicine?*

A. Very much so.

Q. *Is not OAK BARK also in request*

for forming HOT-BEDS *for the growth of* PINES ?

A. Yes, and the branches of the oak, as well as of several other trees, are burned for charcoal.

Q. *What* PARASITICAL PLANT *is sometimes found growing on the* OAK ?

A. The mistletoe, a plant which was held sacred by the ancient Druids.

Q. *What do you mean by* PARASITICAL PLANTS ?

A. Those which draw their nourishment from others.

Q. *What is* WAINSCOTING ?

A. The wood of the Dutch oak ; it is beautifully grained, and when polished forms an elegant wooden lining for rooms.

Q. *But is not the term* WAINSCOTING *applied generally to all* WOODEN LININGS *for rooms ?*

A. Yes ; cedar, mahogany, and even deal being often used.

Q. *What kind of* TREE *is the* ELM ?

A. It is second only to the oak, in size and beauty.

Q. *What is its WOOD particularly used for?*

A. All purposes which are to bear the extremes of wet and dry ; such as water-works, mills, pipes, pumps, and coffins.

Q. *Are not frames for pictures, and other carved work made of ELM?*

A. Yes ; because it rarely warps.

Q. *What do you mean by WARP?*

A. To swell, or shrivel, and bend as other wood does, when it is not dry.

Q. *Have not the DRIED LEAVES of the ELM been used for FOOD for cattle.*

A. Yes ; when there has been a scarcity of hay or other fodder. The young leaves will feed silkworms.

Q. *Is not CHARCOAL made of ELM nearly as good as that made of oak?*

A. Yes.

Q. *Is not the ASH, next to the oak, of most universal use?*

A. It is ; for it serves the soldier for spear handles ; the carpenter, and wheelwright, for ploughs, harrows,

axletrees, &c.; and the waterman for oars.

Q. *Did the ancients make any use of the BARK of the ASH and LIME-TREE ?*

A. Yes ; before the invention of paper, they made use of the inner and finer bark, called philyra, for writing upon.

Q. *Was it more durable than paper ?*

A. It is supposed so, for there are manuscripts writtten on it, still to be seen, though upwards of a thousand years old.

Q. *Of what peculiar use is the BARK of trees ?*

A. It defends them from injury, and preserves them from cold.

Q. *Why do EVERGREENS preserve their leaves during the winter ?*

A. Because their barks are of a more oily quality than those of other trees.

Q. *What is the WOOD of the BEACH-TREE used for ?*

A. The upholsterer forms it into chairs, stools, bedsteads, &c.; dishes and trays are also made of it.

Q. *Is the BARK of this tree useful for anything?*

A. Yes; for floats for fishing-nets, instead of corks.

Q. *Is it not very subject to the worm?*

A. It is; and this unfits it for purposes where duration is requisite; but for handboxes, hat-cases, &c., it is very useful.

Q. *Are not the LEAVES said to be useful?*

A. Yes; when gathered in autumn, they have been said to make the best and easiest mattresses.

Q. *In what COUNTRIES are they much used for this purpose?*

A. In Denmark and Switzerland; they will keep for seven or eight years, and are much superior to straw mattresses.

Q. *Do not many CREATURES feed upon the FRUIT of this tree?*

A. Yes ; deer, squirrels, thrushes, blackbirds, and mice ; it is also said to render the flesh of pheasants very delicate.

Q. *Of what use is the POPLAR ?*

A. It is a very fast-growing tree, useful for all sorts of white wooden vessels ; it is very light, and makes soles as well as heels for shoes.

Q. *By whom is the WALNUT-TREE valued ?*

A. By the joiner and cabinet-maker, for its beautiful colour and grain.

Q. *What USE do they chiefly make of it ?*

A. To embellish works by inlaying them with this variegated wood.

Q. *In what COUNTRY is this wood in universal use ?*

A. In France.

Q. *Is not the FRUIT of this tree in great request ?*

A. Yes ; before it is ripe it is made into a pickle, generally liked, and the nut when ripe is delicious.

Q. *I think the CHESTNUT is the next*

you mentioned; what have you to tell me of that beautiful tree?

A. It is valued by the carpenter next to the oak; many of our ancient houses in London are built of it.

Q. *But has it not one great defect?*

A. Yes; it frequently appears sound without, when decayed within; which makes it yield to the oak in value.

Q. *For what is the BARK of the HORSE-CHESTNUT used?*

A. In dyeing and tanning; also as a substitute for Peruvian bark.

Q. *For what is the FRUIT used?*

A. As food for cattle, sheep, and swine; the seeds yield starch which is used somewhat largely in France.

Q. *Where does the HICKORY-TREE grow?*

A. In North America.

Q. *What kind of TIMBER does it yield?*

A. It is heavy, tough, and tenacious.

Q. *For what is it used?*

A. For cask hoops, whip handles,

carriage shafts, &c. The bark is sometimes used as a yellow dye.

Q. *What kind of FRUIT does it bear?*

A. A nut from which an oil is obtained by pounding and boiling.

Q. *You have told me that ships are built of OAK, but I cannot think that the body of an OAK is either tall or straight enough to make the MASTS.*

A. No ; the masts are made of fir, or pine, which are tall straight trees.

Q. *Are there not several species of FIR-TREES ?*

A. Yes ; there are Scotch pine, spruce firs, silver firs, larches, and cedars.

Q. *Which is the most valuable species of FIR ?*

A. The Scotch pine, which is very durable.

Q. *What countries furnish us with SPRUCE FIRS ?*

A. Norway, and the other Northern parts of Europe.

Q. *What is the TIMBER of these TREES called ?*

A. Deal ; which is in so much use for floors and wainscots.

Q. *Are these TREES valuable for their TIMBER alone ?*

A. No ; turpentine, pitch, rosin, and tar are made of them.

Q. *How are these various articles obtained ?*

A. In the spring they pare off the bark of the pine-tree, and cut a hole at the bottom to receive the sap or juice, which then runs out freely.

Q. *What does this form ?*

A. Common turpentine : it is chiefly brought from America, and the Baltic.

Q. *Is there not a thick matter which settles at the bottom of the still in which it is prepared ?*

A. Yes ; and this is yellow rosin.

Q. *Is the TREE good for anything when they have drained it of all its JUICE or SAP ?*

A. Yes ; for it is then cut down, and hewn into billets, with which they fill a pit dug in the earth, and then set them on fire.

Q. *What purposes does this answer?*

A. Whilst burning, there runs from them a black, thick matter, which is tar.

Q. *What is PITCH?*

A. Only tar boiled with a certain quantity of water; sometimes an equal portion of coarse rosin is melted with it.

Q. *What does PITCH, mixed with ROSIN and a small quantity of OIL or TALLOW, make?*

A. Shoe-makers' wax.

Q. *What does it form when mixed with WHALE FAT?*

A. Carriage grease.

Q. *When were CARRIAGES generally used in England?*

A. In the reign of James I.; there were also hackney-coaches, but they were so cumbrous and jolting, that they were more like waggons.

Q. *How many did they hold?*

A. Eight persons, three on each seat, opposite to each other, and two

who sat back to back on two stools that faced the doors.

Q. How used people to travel before the invention of COACHES ?

A. Either on horseback or in stage waggons.

Q. Can you describe the WAGGONS used in olden times ?

A. They were large and heavy, drawn by several horses, the hinder part was fitted with a hooped cover as a protection from the weather for passengers.

Q. When were MAIL-COACHES first established ?

A. In 1788, by a Mr. Palmer.

Q. At what speed did the MAIL-COACHES travel ?

A. The distance from London to Edinburgh, about 400 miles, was accomplished in forty-three hours ; four horses were employed, which were usually changed every eight miles.

Q. Who introduced the OMNIBUS into England ?

A. A coachman, named Shilibeer ;

he first plied it between Charing-Cross and Greenwich in 1830.

Q. When were COACHES introduced into France?

A. In the reign of Henry II. ; for a long time there were only three coaches in Paris, and it was considered very effeminate to be seen in one.

Q. What great hero was more timorous than a woman in a COACH?

A. Henry IV. of France ; for it had been foretold by an astrologer that he should die in one.

Q. Was this prophecy verified?

A. Yes ; for he was stabbed by Ravallac during a state procession.

Q. How did he reach him?

A. He jumped upon the hind wheel and plunged a knife into the breast of the king, who was reading a letter.

Q. When were SEDAN-CHAIRS brought into England?

A. In the reign of James I. ; the famous Duke of Buckingham first used one.

Q. *Did he not give great offence to the people by it?*

A. Yes; for they thought it degrading to men to do the work of horses.

Q. *What kind of tree is the ALDER?*

A. It is a soft-wooded tree growing in a damp soil; it is used for piles, water-pipes, and other works required under water.

Q. *What is the BIRCH-TREE used for?*

A. The largest trees are useful for the wheels of carriages; the smaller are used by hoop-benders and broom-makers.

Q. *Is the BIRCH-TREE useful for any other purpose?*

A. A sort of wine is made from the sap, and in Lapland a beverage resembling tea is made from the leaves.

Q. *Are there not some other sorts of WOOD you have not mentioned?*

A. Yes; the lime and the willow, box and holly.

Q. *What is the LIME, or LINDEN-TREE useful for?*

A. It is chiefly used by carvers and turners, and for purposes such as pill-boxes, &c.

Q. *When in blossom, do they not supply the BEE with materials for their best HONEY?*

A. Yes.

Q. *What are WILLOW TWIGS used for?*

A. They are made into baskets, bird-cages, cradles, and all sorts of wicker-work.

Q. *Are not OSIERS a sort of WILLOW?*

A. Yes; they are a kind of low willow, found by the water side, used for making baskets, hampers, hurdles, &c.

Q. *Must not the OSIER be peeled when wanted to make fancy baskets, mats, &c.?*

A. Yes; and the English excel in this work, for even in the time of the Romans, British baskets were among the luxuries of the Roman grandees.

Q. *What sort of WOOD is BOX ?*

A. It is remarkable for its hardness, weight, and readiness to take a polish.

Q. *What is it used for ?*

A. The turner finds it most valuable for mathematical instruments, pegs, screws, tops, chessmen, &c.

Q. *What is TURNING ?*

A. The art of forming wood, ivory, and other hard substances into various shapes by means of a lathe.

Q. *How is the work executed ?*

A. The lathe is kept steady, while the wood is turned round like a wheel, a chisel cutting off the outside as it turns.

Q. *Is not TURNING of great antiquity ?*

A. Yes ; it is mentioned by Pliny, and other ancient writers.

Q. *To whom does Pliny ascribe the invention of the LATHE ?*

A. To Theodore of Samos, B.C. 740.

Q. *What does the HOLLY afford ?*

A. The whitest wood of any ; it is hard and close-grained, and is much

used in veneering, and making dressing-boxes, and other fancy works.

Q. *What is BIRD-LIME ?*

A. It is prepared from the bark of the holly, which is full of a slimy substance.

Q. *Was the HOLLY esteemed by the ancient Romans ?*

A. Yes ; it was customary with them to send branches of holly to their friends, with new year's gifts, as emblematical of "good wishes."

Q. *Do we not also, in some measure, keep up the old custom ?*

A. Yes ; for we decorate our houses and churches at Christmas with it, by way of rejoicing, and giving an air of spring in the depth of winter.

Q. *What country produces that species of CEDAR, the wood of which is called MAHOGANY ?*

A. It is a most noble and beautiful tree, which abounds in the southern parts of East Florida, and Honduras, and in the islands of Cuba, Jamaica, and St. Domingo.

Q. *Where are these islands?*

A. In the West Indies, which are a set of islands in the Caribbean Sea, between North and South America.

Q. *Which island produces the finest MAHOGANY?*

A. Jamaica; it admits of a high polish, and is generally used for tables, chairs, &c.

Q. *Is not the profit arising from MAHOGANY very great?*

A. Yes; for one tree has been known to produce upwards of £1000 sterling.

Q. *What do CABINET-MAKERS call the best MAHOGANY?*

A. Spanish; from the settlements where it grows having belonged to the Spaniards; the inferior sort is called Honduras.

Q. *Are there not many species of CEDAR TREES?*

A. Yes; the ancients valued them very highly; Solomon's temple and palace were both built of this beautiful sweet-scented wood.

Q. What mountains were famous for these TREES ?

A Mount Libanus, in Turkey in Asia, between Syria Proper and Palestine.

Q. Is there not a chain of mountains bearing this name ?

A. Yes ; they are so high that they are almost always covered with snow ; but the valleys are very fruitful.

Q. What did the ancients call this part ?

A. Cœlo Syria.

Q. Will this scented wood bear any POLISH ?

A. No ; but on account of its powerful smell, it is much used for lining drawers and cabinets ; the smell also prevents moths, insects, &c.

Q. Was not the YEW TREE much cultivated by our ancestors ?

A. Yes ; for before the introduction of fire-arms, they manufactured their bows of this hard, smooth, tough wood. They were placed in church-

yards by order of William the Conqueror.

Q. *What is EBONY?*

A. A black and valuable wood found only in the centre of the tree, the outside wood is white and soft, but it decays and leaves the black untouched.

Q. *Where does it grow?*

A. In Ceylon and the East Indies ; it is much valued by cabinet-makers for inlaying, and other ornamental work.

Q. *What is the LARCH?*

A. An elegant tree ; a native of the Alps, Apennines, and the mountains of Germany.

Q. *Do they not flourish best in clumps, and in a bad soil?*

A. Yes ; else they become too luxuriant, and top heavy.

Q. *Is it a very useful wood?*

A. Yes ; the Russians use no other for ship-building, and it is well calculated for all works exposed to the weather.

Q. *Will it not admit of a fine polish?*

A. Yes: and contributes to give uncommon lustre to any colouring laid upon it.

Q. *Do not the Italians make use of it for picture frames?*

A. Yes; and this is the reason why the Italian gilding is so much better than ours.

Q. *What great painter used it for his pictures?*

A. Raphael.

Q. *Is not the wood of the LABURNUM very beautiful?*

A. Yes; it is like the dark colour of the cocoa-nut shell, when it is polished.

Q. *What is ROSEWOOD?*

A. A beautiful wood, of a dark colour, much used by cabinet-makers for fashionable furniture, in preference to mahogany.

Q. *Where does it grow?*

A. In the Island of Jamaica, and the Brazils, in South America.

Q. *By what name is it known in the Brazils?*

A. It is called the Jacaranda tree.

Q. *What is the TEAK-TREE?*

A. A most valuable timber tree called the oak of the Eastern world, employed generally there for ship-building.

Q. *What renders it of such great value in India for SHIP-BUILDING?*

A. Because the English oak tree will not grow there; it is not injured by the water, and its bitterness preserves it from worms.

Q. *Of what place in India is it a native?*

A. Of Pegu; but it flourishes luxuriantly on the coast of Malabar, and about Calcutta, and in all parts of Bengal.

Q. *Is it not of very rapid growth?*

A. Yes; and at all ages the wood appears excellent, which is very different to the oak, which requires so many years to arrive at perfection.

Q. *What is the CYPRESS TREE?*

A. A dark evergreen tree, which takes its name from the island of Cyprus, in the Mediterranean, where it still grows in great luxuriance.

Q. *To what heathen GOD is it consecrated, on account of its gloomy appearance?*

A. To Pluto ; it was used at the funerals of the people of eminence, and branches of it were placed before the houses in which persons lay dead.

Q. *Was it valued as a WOOD by the ancients?*

A. Most highly ; it takes a fine polish, is of a pale reddish colour, with deep veins, and is very durable.

Q. *What famous DOORS were formed of it?*

A. Pliny tells us, the doors of the temple of Diana, at Ephesus, were made of it, and they were 400 years old when he wrote, and as fresh as new.

Q. *Were not the gates of St. Peter's at Rome said to be of CYPRESS?*

A. Yes ; and were more than a

thousand years old when they were removed to be replaced by brass ones.

Q. *Where is the BAOBAB found?*

A. In tropical Africa; it is a tree of gigantic size, its branches are as large as stems of common trees, and extend horizontally in all directions, while its trunk assumes the largest girth of all the known trees.

Q. *What illustrious TRAVELLERS have greatly added to our knowledge of the products of Africa?*

A. Captain Speke, Colonel Grant, Sir Samuel Baker, and Dr. Livingstone.

Q. *How many great JOURNEYS were made by DR. LIVINGSTONE into the interior of Africa?*

A. Three; he twice crossed from the shores of the Indian Ocean to those of the Atlantic, opening the dark centre of that continent to the light of knowledge and civilization.

Q. *Did this great traveller ever return?*

A. He passed the last years of his life in making great discoveries, and in 1873, died in those untrodden regions surrounded by a faithful band of Africans, who bore his remains to the coast, whence they were brought to England and buried in Westminster Abbey.

Q. *What is CAMWOOD ?*

A. The wood of an African tree, brought to this country in the form of short logs, roots, and splinters.

Q. *For what is it used ?*

A. The grain being firm and close, it is much used in ornamental turnery, it is also useful in dyeing.

Q. *Is not the DUST extremely pungent ?*

A. Yes ; it much resembles snuff.

Q. *Are there not a great variety of FOREIGN ANIMALS, whose SKIN and FUR are very valuable ?*

A. Yes ; their fur is used for muffs, tippetts, flounces, linings for mantles, hammer-cloths, &c.; and their skins are prepared by the tanner, into leather.

Q. *Which are the most valuable FURS for muffs, &c.*

A. The ermine, sable, and chinchilla.

Q. *What sort of animal is the ER-MINE or STOAT ?*

A. A beautiful little creature, resembling the weasel, found in the northern parts of Siberia, Russia, Norway, and Lapland.

Q. *How are they caught ?*

A. Generally in traps baited with flesh ; but they are sometimes shot with blunt arrows, that their skins may not be injured.

Q. *When do they hunt them ?*

A. In the winter, because their hair, which is as yellow as gold in summer, then turns as white as snow, except the tip of their long and bushy tail, which is as black as jet.

Q. *Does not this circumstance often allow them to escape from their enemies ?*

A. Yes ; for being of the colour of the snow of those cold countries, they are not very easily seen.

Q. *Is not this a proof of the kindness of Providence for all His creatures?*

A. Yes.

Q. *Why is the FUR of these little animals so highly valued?*

A. Because for many centuries past they have been used for lining the robes of our kings and nobles; and the black tips of the tails are very ornamental, valuable, and beautiful.

Q. *Do not the ladies have MUFFS TIPPETS, &c., of ERMINE?*

A. Yes.

Q. *Why are they so expensive?*

A. Because it takes so many skins to make anything; each little tail belongs to a whole skin.

Q. *What is the SABLE?*

A. A small animal resembling the martin and weasel; the fur is very valuable, and of a deep glossy brown, black at the ends.

Q. *Where is it found?*

A. In Siberia, Kamschatka, the vast forests of Russia, and in the northern parts of America.

Q. *How are these animals taken ?*

A. Generally in traps and snares, to avoid hurting their skins, which are sold for large sums.

Q. *Are not the DARK SKINS the most esteemed ?*

A. Yes ; their value greatly depends upon their colour.

Q. *By whom is this animal hunted ?*

A. Either by criminals whom the Russian Government has banished, or by soldiers sent for that purpose.

Q. *Do not these hunters go through great hardship, fatigue, and peril ?*

A. Yes ; for they hunt them in the winter, as their skins are then in the highest perfection, and the cold they have to endure is intense.

Q. *Are they sprightly, active little creatures ?*

A. Very much so ; they form holes or burrows under ground, where they repose all day, and ramble about all night.

Q. *Are SABLE MUFFS, TIPPETS, and TRIMMINGS much esteemed ?*

A. Yes, and very expensive.

Q. *You have mentioned the MARTIN, what sort of animal is it?*

A. A small quadruped of the weasel tribe, about eighteen inches long, valuable for its fur.

Q. *What is its COLOUR?*

A. A blackish tawny colour; the most valuable part of the skin is that which extends along the middle of the back.

Q. *What is it used for?*

A. It is in great request in Europe, for lining and trimming the robes of magistrates; and the Turks, who are very choice in their furs, particularly admire it.

Q. *From whence are these skins imported?*

A. Principally from Hudson's Bay, and Canada; like the ermine and sable they are the finest in winter.

Q. *Who was the DISCOVERER of HUDSON'S BAY?*

A. Henry Hudson, who made a

voyage to the Arctic Seas in the reign of James I.

Q. What is the CHINCHILLA ?

A. A small creature of the rat tribe, which has a beautifully soft gray fur.

Q. Where does it come from ?

A. It is a native of South America; and the Peruvians used to spin the hair of it into a fine delicate wool, which they valued highly.

Q. Has not the skin of the CHINCHILLA of late years been in much request in this country ?

A. Yes, in consequence of its having become a fashionable and favourite article for ladies' muffs.

Q. Do not SWANSDOWN muffs and tippets rank next after these valuable furs ?

A. Yes; these delicate articles are formed of the skin of the wild swan, dressed with the down upon them.

Q. Were not these stately birds highly esteemed by our ancestors ?

A. Yes; at Archbishop Neville's feast in the reign of Edward the Fourth,

four hundred of these birds were dressed.

Q. *Do they eat them now?*

A. No, only the cygnets, or young swans; great numbers of these are fattened near Norwich at Christmas, for the table of the Corporation.

Q. *What is the EIDER-DOWN*

A. The fine white down which grows upon the breast of the eider duck.

Q. *How is it procured?*

A. They plunder the nests of these affectionate creatures who pluck it from their own breasts to line them.

Q. *What is its use?*

A. To stuff cushions or pillows, and for making beds, which are used in very cold countries instead of a common quilt.

Q. *Where are these birds found?*

A. In the northern parts of Europe, Asia, and America; they form their nests on small islands not far from the sea-shore.

Q. *Are there not several varieties of*
SQUIRRELS?

A. Yes, there are—the red, gray, black, and white; the gray skins come from Russia and Siberia.

Q. *Is not the skin of the FITCH, or POLE-CAT, used for common MUFFS, &c. ?*

A. Yes; it is a small animal, the hair coarse, and of two colours, the middle being tawny and the ends black. It is said to breed the moth.

Q. *Where are they imported from ?*

A. Germany and Poland.

Q. *Are BEAR SKINS very useful ?*

A. Yes; of all coarse furs these are the most valuable; at Petersburg and Moscow, they form one of the most costly articles in the winter wardrobe of a man of fashion.

Q. What is the colour of BEAR-SKIN ?

A. Black; except in Greenland, where it is always white.

Q. *To what purposes are they applied in this country ?*

A. They are made into muffs,

travelling caps, gloves, hammer-cloths, housings, carriage-rugs, &c.

Q. *What do you mean by HOUSINGS?*

A. Horse-cloths, put under the saddles of military men, and other ornaments of a cavalry horse, such as pistol-holders, &c.

Q. *From whence are BEARS' SKINS usually imported?*

A. From North America, though they are found in Europe, Asia, and India.

Q. *Is not the hunting of BEARS a principal employment for the inhabitants where they are found?*

A. Yes; and it is a most profitable pursuit.

Q. *Is not the leather made from BEARS' SKIN very useful?*

A. Yes; it is made into harness for carriages, and other purposes where strength is required.

Q. *Is not every part of the BEAR useful?*

A. Yes; its flesh is excellent food, something like pork; its paws are

esteemed a great delicacy, even at the Emperor's table, and the hams are salted and dried, and sent to all parts of Europe.

Q. *Is not the FAT even valuable?*

A. Yes; an oil is made from it used for making the hair grow, and it has been found a remedy for the rheumatism.

Q. *Do not the Russians and Kamtschatkans esteem it as good as olive oil with their food?*

A. Yes.

Q. *What are FOX SKINS?*

A. A soft and warm brown fur, which in many parts of Europe is used for muffs and tippetts, for the lining of winter garments, and for robes of state.

Q. *Is not this animal found in almost every country of the world?*

A. Yes; but the fur that is principally brought to this country comes from North America.

Q. *Are there not black, gray, blue, red, and white foxes?*

A. Yes; but the black is reckoned

the most valuable, on account of its scarcity and beauty.

Q. *Is not FOX-HUNTING a favourite diversion in this country?*

A. Yes.

Q. *What is the BADGER?*

A. A small animal of the bear tribe, covered with long coarse hair like bristles.

Q. *For what purpose is its skin useful?*

A. When dressed with the hair on, it makes excellent knapsacks, and covers for travelling trunks, &c.

Q. *Are not the hairs or bristles made into brushes for painters?*

A. Yes; this animal is found in the woody parts of England and Europe; and it is about the size of a small pig.

Q. *What are LEOPARD SKINS esteemed for?*

A. Principally as furniture for war-horses, hammer-cloths, &c.; the skin is very beautiful, of a deep yellow

colour, sprinkled over with black or dark spots.

Q. *Of what country is the LEOPARD a native?*

A. Of Africa ; it is found principally in Senegal and Guinea ; but there are leopards in Persia, India, and China.

Q. *Is it not extremely savage?*

A. Yes ; and it is caught like the tiger and lion, by digging deep pits, which are lightly covered over.

Q. *Is it not a mark of the kindness of the Creator, that these savage beasts go in search of prey during the night.*

A. Yes ; for in the day, when man is abroad, they usually sleep in their dens.

Q. *What are the SEAL SKINS used for?*

A. The coverings of trunks and making of caps ; the seal is a large marine quadruped, caught in the north and south polar seas.

Q. *Where are they usually found?*

A. In the hollows of rocks or caverns near the sea.

Q. *Are not these animals very watchful?*

A. Yes; they seldom sleep longer than a minute without moving, for having no external ears, they would otherwise be liable to surprise from enemies.

Q. *Are not SEAL SKINS made into a valuable LEATHER for shoes?*

A. Yes.

Q. *What does the WOLF afford us?*

A. Nothing valuable but his skin, which makes a warm and durable fur; he is a ferocious animal of the dog tribe.

Q. *Were not WOLVES once very numerous in England?*

A. Yes; but by the care of Kings Edgar and Edward I., they were entirely destroyed.

Q. *Was not the SKIN of the LION considered a badge of great honour?*

A. Yes, it was formerly used as the tunic of heroes; it now serves both as a mantle and bed for many of the African tribes.

Q. *What do you mean by a TUNIC?*

A. A sleeveless coat or vest.

Q. *Did not the Romans tame this noble beast in a wonderful manner?*

A. Yes ; for Marc Antony, the Roman triumvir, was publicly drawn in his chariot by lions.

Q. *What people value TIGER SKINS very highly?*

A. The Chinese ; the mandarins cover their seats of justice and sedans with them, and use them for cushions and pillows in the winter.

Q. *Have not the great military officers of China the figure of a TIGER embroidered on their robes?*

A. Yes ; and there could not be found a better symbol of the evils and horrors of war.

Q. *Is not the SKIN of the LYNX thought valuable?*

A. Yes ; for it is a thick soft fur, and when the spots are tolerably distinct, the skins are sold at high prices.

Q. *What sort of animal is it?*

A. Of the cat tribe, but four times as large as the common cat.

Q. *Where are they found?*

A. In the woods and forests of the northern parts of Europe, Asia, and America.

Q. *Are not the SKINS of CATS a very considerable branch of commerce in some countries?*

A. Yes; as furs, they are valued for some purposes, but those of the Spanish cats are most esteemed.

Q. *What people export a great many of them?*

A. The Russians; they even send them into China.

Q. *Is not the HAIR of the WILD CAT very long, and of a fine white gray?*

A. Yes; they are a savage, formidable animal, found wild in the woods of Europe, Asia, and America.

Q. *Were not CATS considered as sacred objects by the Egyptians?*

A. Yes; and whoever accidentally killed one was liable to severe punishment.

Q. *What story does Herodotus, the Greek historian, tell us about this?*

A. That whenever a cat died a natural death, the inhabitants of the house used to shave their eye-brows, in token of sorrow.

Q. *What was done with the animal?*

A. It was embalmed and nobly interred.

Q. *What is the ICHNEUMON?*

A. A quadruped found in Egypt and Asia, being in both places highly valued.

Q. *Why?*

A. Because it is the natural enemy of the whole serpent race : it will fight the most venomous of them, and seize them by the throat without receiving any injury itself.

Q. *Is it not also a great enemy to the CROCODILE?*

A. Yes ; for it digs its eggs out of the sand, and kills and devours great numbers of the young ones.

Q. *For these services, was it not*

ranked by the ancient Egyptians amongst their deities?

A. Yes ; and received divine honour.

Q. *Was this formidable creature easily tamed?*

A. Yes ; it was kept in houses like a cat, and destroyed the rats and mice in the same manner.

Q. *What is the OSTRICH ?*

A. An immense bird, found in Asia and Africa.

Q. *What is it valuable for ?*

A. The Arabs hunt it for the sake of the feathers of its wings and tail, which are a great article of traffic.

Q. *What are these FEATHERS esteemed for?*

A. They are used for female head-dresses, and for plumes for the officers' hats, &c.

Q. *What is the BIRD OF PARADISE ?*

A. A most beautiful bird found in New Guinea, and the adjacent islands of Aroo.

Q. *How are they caught ?*

A. They are shot with blunt-headed arrows, or taken by bird-lime, or in snares.

Q. *What do they do with them as soon as they are killed?*

A. They cut their legs off, take out their inside, and dry them with smoke ; they then send them to Banda, and other settlements, for sale.

Q. *What people value them very highly?*

A. The Persians and Indians ; in these countries they adorn the turbans of persons of rank, the handles of sabres, and the trappings of horses.

Q. *Were there not some extraordinary ideas of this bird?*

A. Yes ; it was thought they had no legs, that they were constantly flying, and never touched the earth till their death, and that they fed only on dew.

Q. *How did these ridiculous notions arise?*

A. Probably from the beautiful na-

ture of their plumage, and their being sold without insides, or legs.

Q. *What is the LAMPREY?*

A. A small eel-shaped fish, much esteemed by epicures, particularly when potted or stewed.

Q. *Which of our kings died from eating too heartily of them?*

A. Henry the First.

Q. *What river is celebrated for them?*

A. The Severn; and an ancient custom of the city of Gloucester, was to present to the king, at Christmas, a lamprey pie with a raised crust.

Q. *Did not the Romans set a high value on EELS?*

A. Yes; they considered them one of the greatest delicacies for their tables, and they were preserved and fed with the greatest care.

Q. *Where are they found?*

A. In both salt and fresh water, in almost every country of Europe.

Q. *What is TURTLE?*

A. A species _ tortoise, found in

great numbers on the sea-shore of most countries within the torrid zone.

Q. Are they not highly valued in this country?

A. Yes, for the sake of the fine soup which is made of them; they are brought to us principally from the West Indies.

Q. How are they taken?

A. They are easily caught whilst asleep upon the shore; for the sailors go gently and turn them on their backs, and their shell is so heavy that they cannot recover their feet.

Q. What sort of creature is the LOCUST, which we read of in the Old and New Testament?

A. It is an insect not much unlike a large grasshopper, very common in most of the Eastern countries.

Q. Are they not eaten by many of these people?

A. Yes, and the Hottentots and African tribes delight in them; they make their eggs into a kind of soup, and boil the insects in milk.

Q. Is not the PEACOCK a beautiful creature?

A. Yes; they have always been valued, and were among the treasures of the East sent to King Solomon.

Q. Did not the Romans esteem them highly for the table?

A. Yes; and in England the young pea-fowls are now thought a great delicacy.

Q. By what people are their FEATHERS much valued?

A. By the Chinese, for decorating the caps of the mandarins, and for ornamental works.

Q. How many FEATHERS are there in the PEACOCK'S CREST?

A. Twenty-four; in ancient times their crests were among the ornaments of the kings of England.

Q. Pray what is the NAUTILUS?

A. A very scarce and curious shell, shaped like a ship; the fish that steers this little bark is wondrously made.

Q. Pray describe it.

A. It has eight legs, of different

length and form ; these it uses as oars and rudder, and a skinny membrane it raises, to ply the wind.

Q. *How does it manage its little vessel?*

A. In fine weather it sails along boldly ; but if fearful of danger, it returns to its shell, and sinks to the bottom.

Q. *Is it not supposed that men first took the idea of sailing from what they saw done by this little creature?*

A. Yes ; and the word nautilus is formed from the Greek word “naus,” a ship, or “nautes” a sailor.

Q. *Is not the PINNA MARINA very curious?*

A. Yes ; it is a mussel found on the Calabrian coast, sticking to the rocks.

Q. *What are its HABITS ?*

A. When in search of food, it throws out on the surface of the sea, a beard of the most silky and brilliant appearance, which looks like liquid gold.

Q. What is found in this curious beard?

A. Within its meshes small fish are caught, and every separate tuft contains a little crab.

Q. What are these CRABS called?

A. The watchman of the mussel, for they give notice if an enemy approach, when the mussel directly draws in its shining beard, and guard, along with it.

Q. Is not the POLYPUS a great enemy to the PINNA?

A. Yes; it watches its opportunity when the pinna is in quest of its prey, and chucks a small pebble close to the hinge of the shell, by which it prevents the poor pinna closing it.

Q. I suppose it is then soon made an easy victim?

A. Yes.

Q. Is it not said that Lord Nelson, when stationed on the Sicilian coast, had a MUFF presented to him, made entirely of the tufts of this beautiful BEARD.

A. Yes ; and the value of it was estimated at five hundred pounds.

Q. *What is* NITRO-GLYCERINE ?

A. A chemical substance much more destructive than gunpowder.

Q. *Of what is it made ?*

A. It is produced by the action of strong nitric and sulphuric acid of glycerine at a low temperature.

Q. *By whom was it discovered ?*

A. By a Swedish engineer named Nobel, in 1864.

Q. *What is* DYNAMITE ?

A. It is a name applied to various explosive preparations containing nitro-glycerine.

Q. *What are the properties of* DYNAMITE ?

A. Ignited in the open air it burns slowly, but it is greatly superior in power to gunpowder, being frequently employed in blasting stone and coal.

Q. *What is the* SPECTROSCOPE ?

A. An optical instrument for reflecting rays of light.

Q. *What is the* TELEPHONE ?

A. It is the name given to an instrument for conveying sound through the agency of an electric current from one distant place to another.

Q. *By whom was it discovered ?*

A. We owe the earliest discovery to an American, named Mr. Page, in 1837 ; but the first Telephone was constructed by Philip Riess, in 1861.

Q. *Can you mention any more recent improvements ?*

A. Professor Bell made still further investigations, and it has recently been brought to great perfection by Mr. Edison, of New York.

Q. *What is VULCANITE ?*

A. It is a hard substance, sometimes called hard India-rubber.

Q. *How is it prepared ?*

A. Sulphur is mixed with caoutchouc, and submitted to heat ; this mixture is then placed in moulds of the form required.

Q. *What are some of the purposes for which it is used ?*

A. Mouldings, gun-stocks, combs, and cabinet-work.

Q. *What was the origin of the figure of BRITANNIA?*

A. The Romans, who recorded all events on medals, cast it to signalise their conquest over our island.

Q. *Has it not been preserved as testifying their high opinion of us?*

A. Yes; the warlike nation of Britain is shown by the female's accoutrements; she sits upon a rock or a globe, and the waves of her island-home beat upon her feet.

Q. *What do her SPEAR and SHIELD denote?*

A. The military genius of her country, and her power to defend her freedom and her rights.

Q. *Was the lion assigned her by the Romans?*

A. No; it was added afterwards, probably to denote the magnanimous character of her hardy sons.

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